LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN FINANCE

MASTERS FINAL WORK PROJECT

EQUITY RESEARCH:
TOTAL, SA

PEDRO LOURENÇO

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SUPERVISOR:
VICTOR MAURÍLIO SILVA BARROS

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Abstract

TOTAL S.A. ("TOTAL") is a major Oil & Gas player, that operates worldwide with an integrated operating model, including the exploration and production of oil and natural gas, refining, petrochemicals, and the marketing of fuels and lubricants – TOTAL is the world's 4th biggest IOC, with a 2018FY total asset of €224Bn and a market capitalization of €121.8Bn.

TOTAL has a BUY recommendation, with a 2020YE PT of €59.3/share, meaning an upside potential of 31%, or a potential annualized return of 22%, against the closing price of €45.4 at August 30th, 2019, but with high risk.

The current undervaluation of TOTAL shares is mainly explainable due to i) the pessimist expectations on global economy growth, that directly impacts on the world energy demand, ii) the exposure to commodities price volatility, iii) geopolitical instability and iv) uncertainty about the energy transition trend pace.

Regarding the forthcoming industry trends, TOTAL has a focused strategy that integrates the challenges of climate change. Regarding this, it is expected that the Gas, Renewables & Power business segment, that includes the low carbon power generation and energy efficiency business, grow from 7.1% of TOTAL revenues in 2018 to 21.6% in 2023F.

In addition, TOTAL solid financial position and commitment to the current shareholder return policy, even in lower-earning years, makes credible the dividend increases of +10% and the buyback program of up to $5Bn over the 2018-2020 period.

JEL classification: G10; G32; G34

Keywords: Total SA; Oil & Gas; Oil; Natural Gas; Renewables; Power; Refining; Equity Research; Valuation; Mergers & Acquisitions; M&A

Resumo

A TOTAL S.A. ("TOTAL") é uma das maiores empresas da indústria de exploração de Petróleo e Gás Natural, com operações à escala mundial e um modelo operativo integrado, que abrange toda a cadeia de valor da indústria – a TOTAL é a 4ª maior empresa cotada desta indústria a nível mundial, com um ativo de €224 biliões e uma capitalização bolsista de €121,8 biliões.

A TOTAL tem uma recomendação de investimento de "COMPRA", com um preço alvo de €59,3/acção no final de 2020, com uma valorização potencial de 31% face ao preço de fecho de €45.3, em 30 de Agosto de 2019, mas com risco elevado.

A atual subvalorização da TOTAL deve-se essencialmente a i) expectativas pessimistas do desempenho económico mundial, ii) exposição do preço das matérias-primas, iii) instabilidade geopolítica e iv) à incerteza associada à tendência de transição energética.

Relativamente às tendências futuras da indústria, a TOTAL tem o seu foco estratégico nos desafios da sustentabilidade ambiental e nas alterações climáticas. É disto exemplo o foco no crescimento do segmento de negócio ligado às energias renováveis, com um crescimento esperado de 14,5 pontos percentuais no peso das vendas, entre 2018 e 2023.

Adicionalmente, a sólida posição financeira da TOTAL e o compromisso com a política de retorno para os accionistas, credibiliza a expectativa de crescimento dos dividendos de +10% entre 2018 e 2020, bem como o programa de recompra de acções de $5 biliões no mesmo período.

Classificação JEL: G10; G32; G34

Palavras-Chave: Total SA; Equity Research; Avaliação de Empresas; Fusões e Aquisições; Petróleo; Gás Natural; Renováveis

Acknowledgements

"It will be as when a man who was going on a journey called in his servants and entrusted his possessions to them. To one he gave five talents; to another, two; to a third, one - to each according to his ability. Then he went away. Immediately the one who received five talents went and traded with them, and made another five. (…)

After a long time the master of those servants came back and settled accounts with them. The one who had received five talents came forward bringing the additional five. He said, 'Master, you gave me five talents. See, I have made five more.' His master said to him, 'Well done, my good and faithful servant. Since you were faithful in small matters, I will give you great responsibilities. Come, share your master's joy.' "

Matthew 25:14-30

My deepest thanks,

To the love of my life Vânia, our sweetest daughters Laura and Madalena, and our new coming baby;

My beloved parents, Rosa and Adriano;

My sister, brother-in-law and goddaughter, Inês, Pedro and Elisabete;

My godsons, Lourenço, Luís and Helena;

To Professor Victor Barros, for all the motivation and availability.

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Abbreviations

B	**b (/d)**	Barrel(s) (per day)
	BaU	Business as Usual
	B2B	Business-to-Business
	B2C	Business-to-Consumer
	BEV	Battery electric vehicles
	Bn	Billion(s) (as in "€Bn")
	boe (/d)	Barrel of oil equivalent (per day)
	bps	Basis points
C	**CAGR**	Compound Annual Growth Rate
	CAPEX	Capital expenditure
	CAPM	Capital Asset Pricing Model
	CCGT	Combined-Cycle Gas Turbine
	CCUS	Carbon Capture, Use and Storage
	CEO	Chief Executive Officer
	CFO	Cash flow from operating activities
	CFO	Chief Financial Officer
	CHP	Combined Heat and Power
	CO2	Carbon dioxide
	CRP	Country Risk Premium
D	**D**	Debt
	DCF	Discounted Cash Flow
	DDM	Dividend Discount Model
E	**E**	Equity
	E&P	Exploration & Production business segment
	EBIT	Earnings Before Interest and Taxes
	EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
	EIA	U.S. Energy Information Administration
	ERP	Equity Risk Premium
	ESG	Environmental, Social, and Governance
	EU	The European Union
	EUR	Euro
	EV	Entreprise Value
	EV	Electric vehicle
F	**F**	Forecast (as in F2020)
	FCFE	Free Cash Flow to Equity
	FCFF	Free Cash Flow to the Firm
	FCV	Fuel cell vehicles
	FY	Fiscal Year (as in FY2018)
G	**GDP**	Gross Domestic Product
	GHG	Greenhouse Gas
	GR&P	Gas, Renewables & Power business segment
	GW	Gigawatt(s)
H	**HEV**	Hybrid electric vehicle
I	**ICE**	Internal combustion engine
	IMF	International Monetary Fund
	IOC	Integrated Oil Company
	ISS	Institutional Shareholder Services

K	**kb (/d)**	Thousand(s) barrels (per day)
	kboe (/d)	Thousand(s) barrel of oil equivalent (per day)
L	**LNG**	Liquified Natural Gas
	LPG	Liquified Petroleum Gas
M	**M**	Million(s) (as in "€M")
	M&A	Mergers and Aquisitions
	M&S	Marketing & Services business segment
	mb (/d)	Million(s) barrels (per day)
	mboe (/d)	Million(s) barrel of oil equivalent (per day)
	MBV	Market-Based Valuation
	MENA	Middle East and North Africa (region)
N	**NGL**	Natural Gas Liquids
	NGV	Natural gas vehicle
	NOC	National Oil Company
	NWC	Net Working Capital
O	**OECD**	Organisation for Economic Co-operation and Development
	OPEC	Organization of the Petroleum Exporting Countries
	OPEX	Operational expenditure
P	**p.a.**	Per annum
	PHEV	Plug-in hybrid electric vehicle
	POC	Public Oil Company
	PRC	People's Republic of China
	PT	Price Target
	PV	Photovoltaic (panels or cells)
R	**R&C**	Refining & Chemicals business segment
	R&D	Research and Development
	RFR	Risk free rate
	ROACE	Return on Average Capital Employed
	ROE	Return on Equity
	ROIC	Return on Invested Capital
S	**SDG**	Sustainable Development Goal(s)
	SoP	Sum of the Parts (valuation approach)
T	**t**	Corporate tax rate
U	**UK**	The United Kingdom
	UN	United Nations Organization
	US	The United States of America
W	**WACC**	Weighted Average Cost of Capital
	WC	Working Capital
Y	**YE**	Year End (as in 2019YE)
	YoY	Year-over-year
Z	**ZEV**	Zero-emission vehicle

1. Research Snapshot

TOTAL: Shaping a strategy to lead the energy transition trend

We issue a **BUY recommendation** for TOTAL S.A. ("TOTAL") with a **2020YE PT of €59.3/share**, using a DCF model, implying a **31% upside potential** from August 30th, 2019 closing price of €45.4, although with **high risk** (Figure 1).

In a difficult market environment, with high **exposure to commodities price**, TOTAL **integrated operating model** and **strategic priorities** reinforce its resilience to remain profitable and **consistently delivering value to shareholders**. The transition trend towards greener energy should not jeopardize TOTAL's position in the market, due to World's oil dependence and TOTAL strategic focusing.

"Rule of thumb" shareholder return policy

TOTAL management reiterates its **shareholder return policy**, which was kept even in lower-earning years. Financial projections, with a solid financial position and a sound cash generation – **CFO 2018-2023F CAGR +5.7%**, from €20.9Bn to €27.7Bn in 2023F (Figure 2) – makes credible the **dividend increase of +10% and the buyback program of up to $5Bn the 2018-2020 period** (Figure 3) (Appendix 1).

Steady oil and gas demand outlook

Although the short-term pronunciation of a global economy slowdown and uncertainty about energy transition rhythm, it is expected that oil and gas demand grow steadily in the long run. **Natural Gas has the higher expected growth as primary energy source of 32 mboe/d between 2015 and 2040**, a +1.7% 2015-2040F CAGR. Long-term **Oil demand is expected to increase by 15 mb/d** in the same period, a +0.6% 2015-2040F CAGR (Figure 4) (Appendix 2).

Despite relatively low demand growth rates, **fossil fuels are projected to remain the dominant component in the global energy mix**, with primary energy source mix (Appendix 13).

With a strong and **disciplined E&P segment**, TOTAL is expected to leverage this trend with a **EBITDA +3.0% 2018-2023F CAGR** from Upstream activities (Figure 5).

Strategy set to face the future

Beyond the Upstream segment core, TOTAL sees the energy transition trend as an opportunity, **integrating climate challenges into its strategy**. TOTAL set the **expansion of low carbon power generation and energy efficiency business** as a strategic priority. Thus, it is expected to see a **GRP segment EBITDA growth from €0.4Bn in 2018 to €6.2Bn in 2023F** (Appendix 3).

…But in the end, it's all about commodities price

Although **management resilience and track record of consistently delivering the targeted strategic objectives** over the years, TOTAL exposure to **commodities price, the major key driver of profitability**, impacts directly on company earnings and valuation (Figure 6).

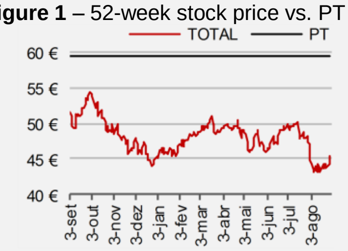
Figure 6 – PT sensitiveness to commodity price (€/share)

Annual avg. Brent price ($/b) for 2019F (year 0)										
54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0	72.0	74.0
34.0 €	39.1 €	44.1 €	49.2 €	54.3 €	59.3 €	64.4 €	69.5 €	74.5 €	79.6 €	84.7 €

Source: *Author analysis*

Price Target	**€59.3**
Current Price (Aug.30th)	€45.4
Upside potential	31%
Annualized return	**22%**
	High risk
Bloomberg/ Reuters code	**FP FP / TOTF.PA**
Market cap (€M)	**121,846**
Free float (%)	**100%**
No. shares outstanding (#M)	**2,641**
YTD performance (%)	**-0.2%**
52-week range (€)	**€43.2 - €54.2**

Figure 1 – 52-week stock price vs. PT



Source: *Author analysis*

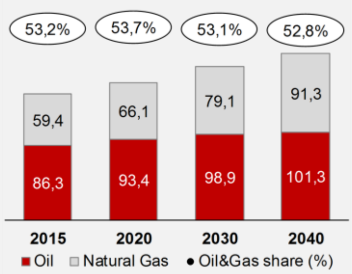
Figure 2 – Financial highlights

	2018	2019F	2023F
Revenues (€Bn)	156.0	147.6	194.7
EBITDA (€Bn)	25.9	26.0	36.2
EBITDA Mg. (%)	14.6%	15.4%	16.7%
Net Profit (€Bn)	9.7	9.2	14.1
NPM (%)	5.5%	5.5%	6.5%
CFO (€Bn)	20.9	19.8	27.7
CAPEX (€Bn)	13.2	13.1	15.3
Debt Ratio (%)	54%	54%	53%
Debt/EBITDA (x)	4.7	4.6	3.6
Int. Coverage (x)	7.8	9.6	13.7
ROIC (%)	8.5%	8.1%	11.5%
ROCE (%)	8.3%	7.9%	11.4%
ROE (%)	9.4%	8.9%	12.2%

Figure 3 – Shareholder return policy

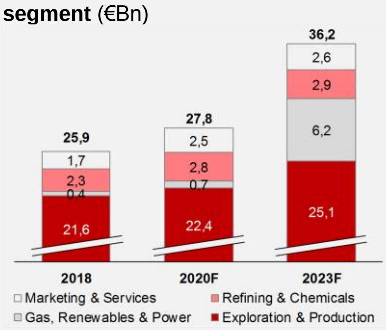
	2018	2019F	2023F
Dividend (€/sh.)	2.56	2.64	3.02
Payout ratio (%)	70%	75%	57%
Div. yield (%)	5.5%	4.6%	4.6%
Sh.buyback($Bn)	1.5	1.5	2.0

Figure 4 – Oil and Natural Gas primary energy source global demand (mboe/d)



Source: *World Oil Outlook 2040,*

Figure 5 – EBITDA per business segment (€Bn)



Source: *Author analysis*

2. Business Description

The Company

TOTAL S.A. ("TOTAL") is a **major Oil & Gas player**, that **operates worldwide** with **an integrated operating model** (Appendix 4), including the exploration and production of oil and natural gas, refining, petrochemicals, and the marketing of fuels and lubricants – TOTAL is the **world's 4th biggest IOC, with a total asset of €224Bn and a market capitalization of €121.8Bn**.

It also operates in the energy value chain (gas and renewables), namely in the low-carbon electricity production, distribution and retail activities – TOTAL is the **world's 2nd LNG player** (Appendix 5).

TOTAL has the ambition of becoming a responsible energy major, with over 100,000 employees committed to supplying a more affordable, cleaner and accessible energy to as many people as possible (Figure 7).

Figure 7 – TOTAL 2018FY major figures

4th world's Oil & Gas company	2nd world's LNG player
>130 countries	104,406 employees
156 B€ of revenues	122 B€ of market capitalization

Source: *TOTAL's Registration Document 2018; Bloomberg*

The History

The Company history starts in 1924 with the creation of the *Compagnie Française des Pétroles* (CFP). Its international profile is present right since the beginning, with the initial discovery of the Kirkuk field in Iraq in 1927.

TOTAL is launched as a brand in 1954 and the Company formally adopted this designation for the first time in 1991.

After a long process of international expansion, TOTAL became the world's 4th largest Oil & Gas publicly-traded company with the incorporation of Fina and Elf Aquitaine, in 2000, and changes its designation to TotalFinaElf. The Company changes again its designation to TOTAL in 2003.

Besides the organic growth in the following years, TOTAL made some **major M&A operations**, such as 60% of SunPower (solar energy business in a cash transaction of €1,058M) in 2011, Saft Groupe (battery manufacturer in a cash transaction of €986M) and Lamparis (green energy supplier – non disclosed agreement) in 2016, Maersk Olie og Gas A/S (Maersk Oil&Gas business segment in a paid in stock transaction of €6,304M) and Direct Énergie (electricity producer and distributor in a cash transaction of €2,563M) in 2018. Still in 2018, TOTAL concludes the acquisition of Engie's LNG business (non-disclosed agreement), announced in the previous year, becoming the world's **2nd largest NGL publicly-traded player** (Figure 8).

Figure 8 – TOTAL latest major M&A operations

	Value	Paymnt. Type
2000 - Elf Aquitaine	€53,506M	Stock
2011 - SunPower	€1,058M	Cash
2016 - Saft Group	€986M	Cash
2016 - Lamparis	n/d	n/d
2018 - Maersk Oil	€6,304M	Stock
2018 - DirectÉnergie	€2,563M	Cash
2018 - Engie LNG	n/d	n/d

Source: *Bloomberg*

Financial highlights

TOTAL reached in 2018FY €156.0Bn[1] of revenues and an EBITDA value of €25.9Bn[2]. The net profit reached €9.7Bn[3] (Appendix 8 and Appendix 17).

TOTAL's business segments

In order to manage the volatility of oil and gas commodities, TOTAL evolved as an **integrated operating model over the energy value chain**. Thus, TOTAL activities are structured in **four business segments[4]**, that enables the company to benefit from complementary activities synergies and to capture margin within the Group when commodities prices changes.

[1] Includes €-58.9Bn of Corporate segment and Intercompany sales adjustment.
[2] Includes €-0.1Bn of Corporate segment and Intercompany sales adjustment.
[3] Group share, after Minority Interests.
[4] Excluding Corporate division (headquarter fees to subsidiaries). Revenues include intersegment and non-group sales, before intercompany adjustment (Figure 10, Figure 11, Figure 12, Figure 13).

Exploration & Production (E&P)

The E&P segment encompasses the **Group's oil and gas upstream activities**, such as discovery, exploration, development and production of oil and gas fields, and the **interests in pipelines**.

This segment output includes both Liquids (crude oil, Natural Gas Liquids (NGL), bitumen and condensates) and Natural Gas, with the **2018YE production settled in 2,755 kboe/d** and the **proved reserves level at 12,050 Mboe** (Figure 9).

Considering the current portfolio of reserves[5], TOTAL has approximately **20 years of reserve life** based on the 2018 average production rate.

E&P segment contributed to the Group's 2018YE results with **€35,731M in revenues** (+18% CAGR 2015-18) and an **EBITDA of €21,648M** (Figure 10).

Gas, Renewables & Power

Gas, Renewables & Power exists as an individual business segment since 2017[6] and operates along the **full gas** (production, shipping, regasification and trading) **and power value chain** (from low carbon electricity production to marketing activities), as well the **energy efficiency business** (e.g. batteries and energy storage solutions, Carbon Capture, Use and Storage (CCUS) solutions).

After the acquisition of Engie's LNG business, finalized on July 2018, TOTAL became the **world's 2nd largest LNG publicly-traded player**. The activities in the gas business also comprise the trading and marketing of natural gas, both Liquified Natural Gas (LNG) and Liquified Petroleum Gas (LPG), with the primary objective of enhancing the value of the Group's gas resources and ensuring the market placement of upstream production.

In addition, TOTAL also trades Petcoke and Sulfur, and is present in the water desalination business.

TOTAL also aims to pursue the development of expertise in the **low carbon power generation**, primarily through cogeneration and combined-cycle power plants, in addition to the sources of intermittent renewable electricity (wind and solar). At 2018YE, TOTAL had an **installed capacity of 2.7 GW**, selling the produced electricity to both industrial, commercial and domestic customers.

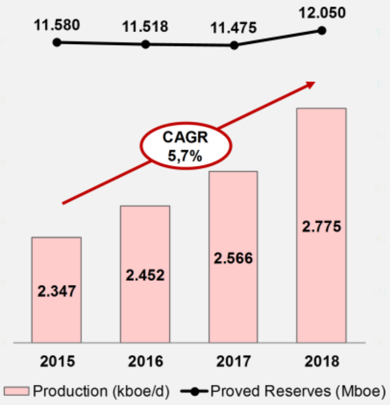
The Gas, Renewables & Power segment contributed to the Group's 2018YE results with **€15,276M in revenues** (+18% CAGR 2015-18) and an **EBITDA €379M** (Figure 11).

Refining & Chemicals

Refining & Chemicals is a **large industrial segment** whose outputs include **refined products** (gasoline, aviation fuel, diesel and heating oil, heavy fuels and others), **base petrochemicals** (olefins and aromatics), **polymer derivatives** (polyethylene, polypropylene, polystyrene and hydrocarbon resins), **biomass transformation** and **elastomers transformation**.

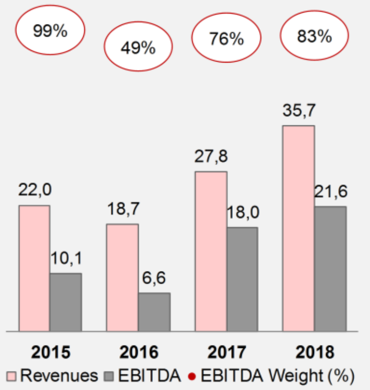
With a **2018YE crude oil refining capacity of 2,021 kb/d, and a utilization rate of 92%**, TOTAL is among the **world's 10th largest integrated producers**.

Figure 9 – TOTAL Upstream Oil and Gas production



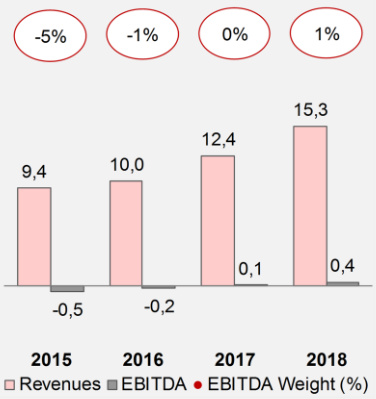
Source: *TOTAL's Registration Document 2018*

Figure 10 – E&P segment Revenues and EBITDA (€Bn)



Source: *Bloomberg*

Figure 11 – Gas, Renewables & Power segment Revenues and EBITDA (€Bn)



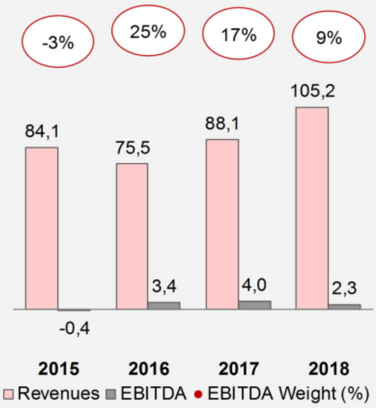
Source: *Bloomberg*

[5] Considering proved and probable reserves covered by Exploration & Production contracts on fields that have been drilled and for which technical studies have demonstrated economic development in the price scenario retained by the Group.
[6] Company figures of 2015 and 2016 restated for analysis purposes.

It is also included in this segment the **Trading & Shipping activities**, that are responsible for selling and marketing the Group's crude oil production, provide a supply of crude oil for the Group's refineries, charter appropriate ships for these activities and trade on derivatives markets.

This segment contributed to the Group's 2018YE results with **€105,195M in revenues** (+8% CAGR 2015-18) and an **EBITDA of €2,322M** (Figure 12).

Figure 12 – Refining & Chemicals segment Revenues and EBITDA (€Bn)



Source: *Bloomberg*

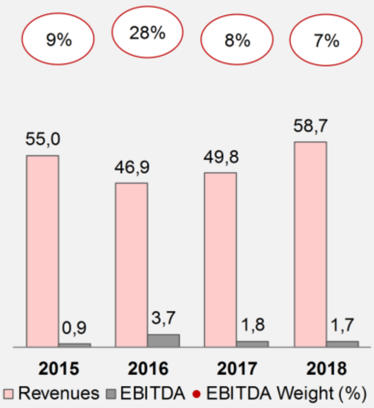
Marketing & Services

The Marketing & Services segment regards to the **worldwide supply and marketing activities of oil products and related services**.

TOTAL **sells a wide range of products to B2C and B2B clients**, namely fuel and services, lubricants, bulk fuels, aviation fuel, special fluids, Liquified Petroleum Gas (LPG), bitumen, heavy fuels and marine bunkers, through a **retail network of 14,311 service stations around the world**, as of December 31, 2018. At 2018YE sales reached 1.801 kb/d of petroleum products (+1,2% YoY).

This segment contributed to the Group's 2018YE results with **€58,719M in revenues** (+2% CAGR 2015-18) and an **EBITDA of €1,694M** (Figure 13).

Figure 13 – Marketing & Services segment Revenues and EBITDA (€Bn)



Source: *Bloomberg*

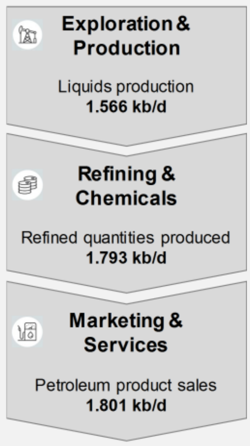
Key drivers of profitability

The main factor that affect TOTAL's profitability is **commodities price**. This exposure to market volatility has been the main factor of TOTAL current depressed stock price and the remaining uncertainty around commodities price will continue to pose a substantial risk to the company going forward (Appendix 15).

One action to mitigate commodities price volatility, among others, is the **rig portfolio management** through an asset rotation strategy, that consists in the selling of mature production sites and buy new undeveloped fields with lower break-evens. (e.g. TOTAL sales of upstream assets in the UK North Sea and buy of african assets of Anadarko Petroleum).

Additionally, TOTAL builds value through an **integrated operating model** that enables synergy capture over the value chain (Figure 14).

Figure 14 – Oil integrated operating model activities



Source: *TOTAL's Registration Document 2018*

Strategy

TOTAL's ambition is to become the responsible energy major by contributing to a more affordable, available and cleaner energy, to as many people as possible.

TOTAL implements a clear strategy based on **four main strategic priorities, that integrates the challenges of climate change**, considering the United Nations ("UN") Sustainable Development Goals ("SGD") in its operations:

- Driver **profitable and sustainable growth in Exploration & Production** activities, **focusing on the production of Natural Gas, the fossil fuel that emits the least amount of carbon dioxide**. Maintain a **strict investment discipline**, with the concern of producing at a competitive cost and decreasing the portfolio breakeven (target pre-dividend breakeven below 30$/b and target gearing ratio below 20%), to remain profitable across a broader range of environments;
- Further develop the **competitiveness of the large integrated refining and petrochemicals platforms** (e.g. launch of new projects in the US, Saudi Arabia, South Korea and Algeria) and **expand sustainable biofuels and recycling activities**; Ensure **units availability and portfolio diversity**;

- **Increase the distribution of petroleum products, particularly in high-growing region** – focusing on Americas and Asia, with strong growth opportunities (e.g. 2016 acquisition in Dominican Republic and persecuting new opportunities in Brazil and Mexico, 2016 acquisitions in Philippines and Vietnam, signature of a major partnership with an Indian conglomerate in 2018 to build a retail network of 1.500 service stations, signature of a joint venture with Saudi Aramco to develop a network of fuel and retail in Saudi Arabia), and Russia with the implementation of major industrial projects – and **offer innovative solutions and services** that meet the needs of customers above and beyond the supply of petroleum products; and
- **Expand along the full gas value chain** by unlocking access to new markets (e.g. acquisition of Engie's LNG assets and start-up of Cameron LNG project) and **boost profitable growth in the low carbon electricity business** (e.g. acquisition of Direct Énergie), from production based on gas and renewable energies to electricity and gas distribution to end customers.

Shareholder structure

With a **free float of 100%**[7], TOTAL has a shareholder base of approximately 450,000 investors, being **87.6% of the share of capital detained by institutional shareholders** (Figure 15 and Figure 16).

TOTAL shares, in a total of **2,640,602,007 ordinary shares** issued, as of December 31, 2018, are **traded in Paris** (Euronext Paris), **Brussels** (Euronext Brussels), **London** (London Stock Exchange) and **New York** (New York Stock Exchange).

The shares held by the Board of Directors and the Executive Commission count for less than 0.5% of share capital, in a total of 701,535 shares.

There is a **single category of shares**, but **double voting right** is granted to fully paid shares held continuously by the same shareholder for at least two years.

No privilege is attached to a specific class of shares or to a specific class of shareholders, besides double voting right mentioned before.

Dividend policy

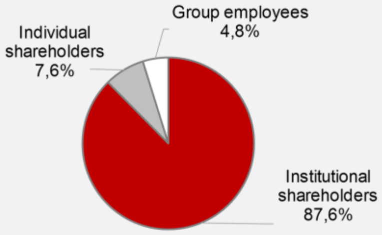
TOTAL paid a dividend of **2.56€ per share for 2018FY**, divided into quarterly payments, according to the dividend payment policy adopted since 2011.

This represents an increase of **+3.2% YoY** or a **+1.6% CAGR 2015-18** (Figure 17).

The **pay-out ratio for 2018FY was 70%**, having this percentage registered a notable decrease since the yearly maximum of 130% in 2015FY. To notice that even in lower-earning years, TOTAL kept their commitment to the dividend policy.

The current shareholder return policy promises a dividend increase by +10% and a buyback program of up to $5 billion[8], over the 2018-20 period.

Figure 15 – Shareholding structure by shareholder type (% share of capital)



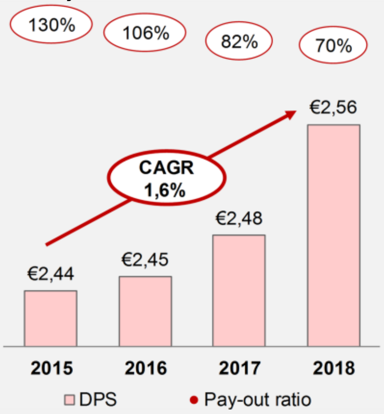
Source: *TOTAL's Registration Document 2018*

Figure 16 – TOTAL top 10 Shareholders (% share of capital)

Holder Name	Institution Type	%
Credit Agricole Group	Bank	7.7%
BlackRock Inc	Investment Advisor	6.1%
Vanguard Group Inc/The	Investment Advisor	3.0%
Norges Bank	Sovereign Wealth Fund	2.0%
Capital Group Inc/The	Investment Advisor	1.6%
Deutsche Bank AG	Investment Advisor	1.5%
T Rowe Price Group Inc	Investment Advisor	1.0%
Dimensional Fund Advisors	Investment Advisor	1.0%
FMR LLC	Investment Advisor	0.9%
Invesco Ltd	Investment Advisor	0.8%

Source: *Bloomberg (as of Sep. 2019)*

Figure 17 – Dividend per share (DPS) and Pay-out ratio



Source: *TOTAL's Registration Document 2018*

[7] Stoxx determined a free float of 100%, for calculating TOTAL's weight in the Euro Stoxx 50 purposes. Euronext Paris determined a free float of 95%, as of December 31, 2018, for calculating TOTAL's weight in the CAC40 purposes.
[8] €4.2 billion at FY2018 avg. exchange rate of 1.18 EUR/USD. Buyback program considering a $60/b Brent scenario, being the total amount of the program possible of be adjusted in function of this variable.

3. Management and Corporate Governance

Governance Model

TOTAL follows a **Unified Management Form**, where **Mr. Patrick Pouyanné assumes both positions of CEO and Chairman** of the Board of Directors ("Chairman"), since 2015, following common industry practice (Figure 18).

The Board of Directors

The Board of Directors ("the Board") is the **collegial body with the responsibility to state the strategic orientation of the company and to supervise its implementation**. It approves investment and divestment decisions when they concern amounts that exceed 3% of the Group's equity and is informed of investments and divestments in amounts exceeding 1% of equity. It monitors the management of both financial and extra-financial matters and ensures the quality of the information provided to shareholders and to financial markets.

The Board is composed by **12 members**, including the Chairman, **1 Director representing employees**, **1 Director representing employee shareholders** and the remaining **9 independent directors** (Figure 19).

Attentive to the concerns of investors and stakeholders, the **Board promotes the balance of power within the Group**. Every year the composition of the Board is appraised to identify desirable changes, to ensure a high level of independence and commitment to the Company.

Another measure related to this concern is the **nomination of a Lead Independent Director**, when the same person assumes the position of CEO and Chairman simultaneously. Among other responsibilities described in Rules and Procedures of the Board, the Lead Independent Director performs periodic due diligences to identify potential conflicts of interest and bring it to the attention of the CEO and Chairman. Following this task, for 2018FY it was concluded that **there are no identified potential conflicts of interest** between the Director's private interests and their duties to the Company. There is also **no knowledge of family relationships among Board members, or agreement with major stakeholders**, customers or suppliers, and there is no service agreement that binds a Director to TOTAL or any of its subsidiaries.

The Board relies on the work of four Committees: the **Audit Committee**, the **Governance and Ethics Committee**, the **Compensation Committee** and the **Strategic & CSR Committee** (Appendix 10).

Each Director is appointed for a three-year period, being the terms of office staggered to space more evenly the renewal of appointments and to ensure the business continuity, in **accordance with the recommendations made in the AFEP-MEDEF Code**.

The balance of power within the Group is thereby ensured by stable and structured governance, with a high proportion of independent directors, the nomination of a Lead Independent Director to the Board of Directors and its Committees.

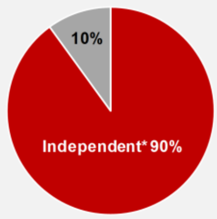
Figure 18 –
Mr. Patrick Pouyanné profile

Board 1st appointment: 2015
Term of office: 2021

- Graduate at École Polytechnique;
- Between 1989 and 1996, held administrative positions in the Ministry of Industry, the Ministry for Information and Aerospace Technologies and other cabinet positions (e.g. technical advisory to the Prime Minister);
- Joined TOTAL in 1997, as Chief Administrative Office of Angola's E&P division. In 1999 became President of Qatar's E&P subsidiary. In 2002, was appointed President of Finance, Economy and IT for Exploration & Production. In 2006, became Senior Vice President, Strategy, Business Development and R&D in Exploration & Production, and was appointed as a member of the Group's Management Committee. In 2011, was appointed Deputy General Manager, Chemicals, and Deputy General Manager, Petrochemicals. In 2012, became President, Refining & Chemicals and a member of the Group's Executive Committee;
- Became CEO of TOTAL in 2014, and was appointed as Chairman of the Board of Directors in 2015;
- Member of the Strategy and Investments Committee, since 2017.

***Source:** TOTAL's Registration Document 2018*

Figure 19 – Independent Directors proportion in the Board



**excluding the director representing employee shareholders and the director representing employees, in accordance with the recommendation of the AFEP-MEDEF Code.*

***Source:** TOTAL's Registration Document 2018*

The Executive Commission

The Executive Committee, under the responsibility of the CEO, Mr. Patrick Pouyanné as referred above, is the **decision-making body of the Group**.

It **implements the strategy formulated by the Board** of Directors and authorizes related investments, subject to the approval of the Board of Directors for investments exceeding 3% of the Group's equity or notification of the Board for investments exceeding 1% of equity.

As of August 2019, the members of TOTAL's Executive Committee were as follows:

- **Patrick Pouyanné, Chairman and CEO**;
- **Jean-Pierre Sbraire, CFO**;
- Arnaud Breuillac, President, Exploration & Production;
- Philippe Sauquet, President, Gas, Renewables & Power;
- Bernard Pinatel, President, Refining & Chemicals;
- Momar Nguer, President, Marketing & Services;
- Namita Shah, President, People & Social Responsibility;
- Helle Kristoffersen, President, Strategy & Innovation.

Besides the **Executive Committee members large experience in the industry, the executive compensation scheme is a strong tool to encourage the strategy implementation success and the value delivery**.

For instance, the CEO and Chairman compensation results from a fixed component plus a variable component and in-kind benefits. The long-term commitment is addressed by granting an additional package of stock options and performance shares (Figure 20).

The variable component from the compensation scheme is set to a theoretical maximum of 180% the fixed component, contingent to a set of qualitative criteria and quantitative targets (Figure 21)

TOTAL's management has a **track record of consistently delivering the targeted strategic objectives over the years** (Appendix 11).

Sustainability and ESG metrics

TOTAL management is committed to contributing to the United Nations ("UN") Sustainable Development Goals ("SGDs"), by adopting UN's recommendations for a set of business-related SGDs where it can have a more active contribution, such as decent work, human rights, climate change and access to energy.

As recognition of TOTAL's active role in the sustainability matters, its shares are included in the **FTSE4Good Index** since 2001 and in the **Dow Jones Sustainability World Index** since 2004.

Regarding standard ESG metrics and comparing to its peers[9], TOTAL practices are aligned with the industry, with a median **ISS Governance Quality Score, of 4**[10] out of 10, and a slightly above the industry median of **Bloomberg's ESG Disclosure Score, of 60**[11] out of 100 (Figure 22).

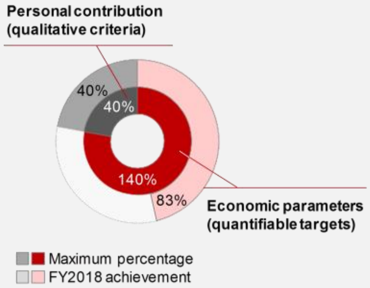
[9] Industries peers: ExxonMobil, Royal Dutch Shell, BP and Chevron (Appendix 36).
[10] A score of 1 indicates lower governance risk, while a 10 indicates higher governance risk.
[11] Measure of information transparency. The more information disclosed, the higher the score.

Figure 20 – Mr. Patrick Pouyanné compensation (€M)*

**Amounts due for 2018FY for fixed, variable and in-kind benefits (variable compensation to be paid in 2019). Accounting valuation of the performance shares granted during 2018FY.*

***Source:** TOTAL's Registration Document 2018*

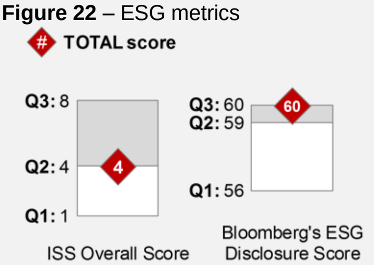
Figure 21 – Mr. Patrick Pouyanné variable compensation scheme*



**As a percentage of the FY2018 fixed compensation.*

***Source:** TOTAL's Registration Document 2018*

Figure 22 – ESG metrics



***Source:** Bloomberg; Yahoo Finance*

4. Industry Overview and Competitive Positioning

World Economic Outlook

World GDP Growth

Global economy is currently pronouncing a slowdown. After a sustainable recovery from 2009's crises, with an **annual average growth of 3.8% from 2010 to 2018**, the latest IMF **forecast for 2019 stays at 3.3%** growth. This inversion is driven by the mutual imposition of tariffs between US and PRC commercial trades, the uncertainty related to Brexit development and the rising of geopolitical tensions.

The projected growth **pickup in 2020 and following years, at 3.6% flat**, is precarious, presuming stabilization in currently stressed emerging market and developing economies and progress toward resolving trade policy differences, including those between the UK and the EU and the free trade area encompassing Canada, Mexico, and the US (Figure 23) (Appendix 12).

World Population

World population rose at a **1.15% CAGR for the last 10 years**, from 6,732 million in 2009 to 7,462 million in 2018. It is expected that population growth keeps **stable in the following years, at a 1.1% annual growth rate**, reaching the 7,545 million in 2019F and 7,627 million people in 2020F (Figure 24) (Appendix 12).

World Energy Demand

Global energy demand is expected to reach **365 mboe/d in 2040, meaning an increase of 91 mboe/d from 2015**, when it counts 274 mboe/d. This figures a global average annual growth of 1.2% p.a. Different growth rates are expected for different world regions due to different population and economic growth (Figure 25).

In terms of energy mix, it is expected that **Natural Gas has the largest estimated demand growth, increasing by almost 32 mboe/d** between 2015 and 2040, an annual average growth rate of 1.7%. Consequently, the share of Natural Gas in the global energy mix is expected to rise 3.3 percentage points, from 21.7% in 2015 to 25% in 2040.

'Other renewables', mainly wind and solar, are projected to have the highest average growth rate of around 7.4% p.a. during the forecast period. Nevertheless, due to the current low starting point, the increase in absolute terms is estimated at around 19 mboe/d between 2015 and 2040.

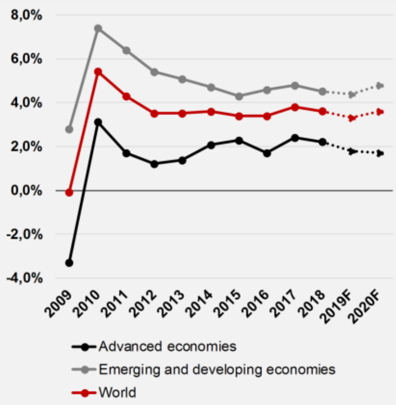
Oil is expected to remain the largest contributor to the energy mix throughout the forecast period, with a share of nearly 28% in 2040. Long-term oil demand is expected to **increase by 15 mb/d, rising from 97.2 mb/d in 2017 to 111.7 mb/d in 2040**, but growth decelerates over time (Figure 26).

Despite relatively low demand growth rates, **fossil fuels are projected to remain the dominant component in the global energy mix**, with a share of 75% in 2040, despite a 6 percentage points decreasing from 2015 (Appendix 13).

Global Oil Supply

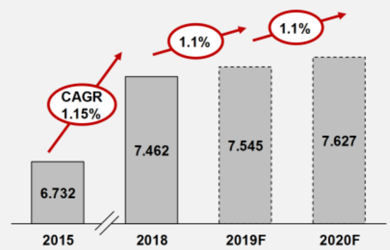
Total **non-OPEC liquids supply is expected to rise from 57.5 mb/d in 2017 to 66.1 mb/d in 2023**, of which 5.6 mb/d or 65% is in the US due to tight oil's production increasing. In addition to the US, only a handful of other countries are forecast to drive non-OPEC medium-term supply growth, including Brazil (+1.4 mb/d), Canada (+0.8 mb/d) and Kazakhstan (+0.3 mb/d). **Non-OPEC liquids supply is projected to peak in the late 2020s**, as US tight oil supply peaks.

Figure 23 – World GDP real growth (Annual percent change)



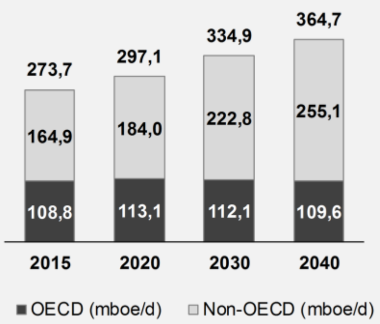
Source: *IMF (2019)*

Figure 24 – World population (Millions of people)



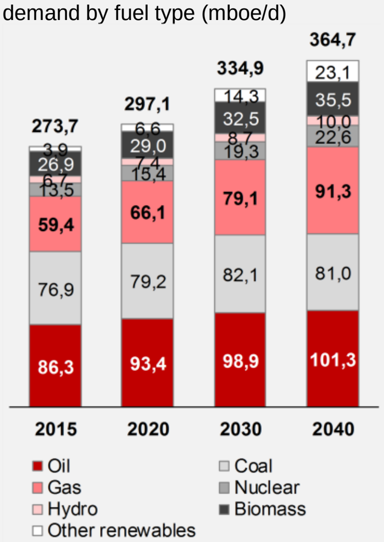
Source: *IMF (2019)*

Figure 25 – Global primary energy demand by region (mboe/d)



Source: *World Oil Outlook 2040, OPEC 2018*

Figure 26 – Global primary energy demand by fuel type (mboe/d)



Source: *World Oil Outlook 2040, OPEC 2018*

OPEC crude supply is expected to decline from 32.6 mb/d in 2017 to 31.6 mb/d in 2023. Thereafter, after the decline in non-OPEC liquids supply, coupled with moderate, but sustained global demand growth, leads to a **steady increase in OPEC crude supply, which rises to almost 50 mb/d by 2040** (Figure 27).

Crude Oil Price

Crude oil price is a source of uncertainty around the Oil & Gas industry. Its volatility is due to many factors, such as World economic growth expectations and geopolitical tensions.

The crude oil prices recovery from 2008 World financial crises, when Brent went from a maximum $133.9/b in 07M2008 to $41.6/b in 12M2008, until the mid-2014, driven by growing demand of emerging economies (e.g. China, Brazil, India and Russia) and supply instability due to the Arab Spring.

In 2014, a new collapse was felt, when Brent went from a maximum $111.9/b in 06M2014 to $62.3/b in 12M2014, due to the economic slowdown of the same economies and the Saudi Arabia geopolitical agenda – Saudi Arabia expected that letting crude oil prices fall would be more benefit in the long-term, by forcing countries such as the U.S. and Canada to abandon their more costly production methods due to lack of profitability.

In response to the prices fall, OPEC decided to cut its production, what supported the crude oil price uprising until 2018Q4 (Appendix 14).

In the latter 2018, crude oil prices dropped again. After a registered a 33 months maximum with **Brent quoting at $80.5/b in 10M2018, prices fall to a 15 months minimum of $56.5/b in 2018YE**. Already in 2019, Brent quotation registered a recovery until April, with a price of $71.2/b, and then turn back to the downward trend, quoting at **$63.0/b in 06M2019**. This downward trend since 4Q2018 is due to a **weaker economic sentiment about global growth**, and **uncertainty about ongoing trade disputes between major economic powers** and a **disorderly Brexit**, that could lead to a **reduction in the rate of growth of international trade and oil demand** (Figure 28).

Recent crude oil price forecasts[12] put Brent at annual average of **$64/b for 2019 and $65/b to 2020** (Figure 29).

Global Oil & Gas Industry Overview

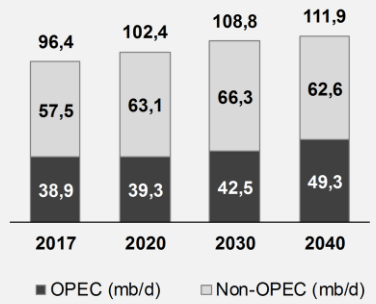
Industry Structure

Oil & Gas industry includes the global processes of exploration and extraction – **Upstream** activities – transportation and trading – **Midstream** activities – as well as refining and marketing of finished products – **Downstream** activities (Appendix 5).

The market is structured in an **Oligopoly**, composed by a small set of large players (e.g. Integrated Oil Companies) that influence the direction of the market and by a group of small companies conditioned by them (e.g. Independent operators).

Oil & Gas industry is at a **mature stage** on its life cycle, with **business cycles ranging between 7 and 9 years** (Figure 30).

Figure 27 – Global Oil supply by region (mb/d)

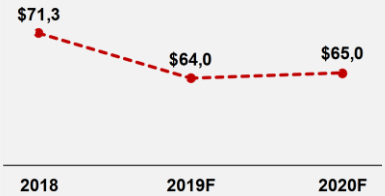


Source: *World Oil Outlook 2040, OPEC 2018*

Figure 28 – **Brent** 52-week evolution ($/b)

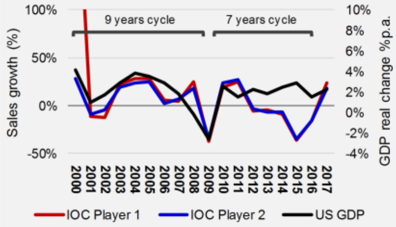
Source: *Bloomberg*

Figure 29 – Brent price forecast (annual average $/b)



Source: *EIA Short-Term Energy Outlook (August 2019)*

Figure 30 – Oil & Gas industry business cycle



Source: *Author analysis*

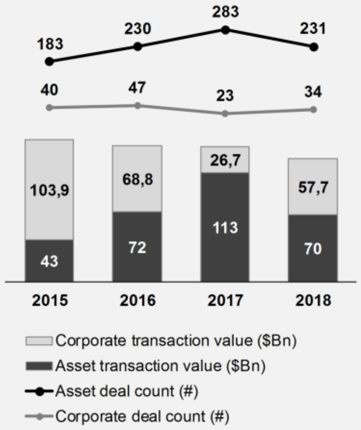
[12] Source: EIA Short-Term Energy Outlook (August 2019)

M&A Activity

Consolidation through M&A remains a key strategy for competitive advantage, being a route to scale, focus, and cost control, strengthening companies across economic and commodity cycles. In addition to enterprise M&A operations, the major IOC also perform **asset rotation**[13] and **strategic divestures** to rebalance their portfolio, with lower break-even assets, and create value while recycling capital. Typically, these sells are made to large private equity-backed independents, such as TOTAL's sale of operated and non-operated upstream assets in the UK North Sea to Petrogas (the E&P arm of the Oman-based conglomerate MB Holding) and its private equity partner HitecVision, in as transaction of $635M on July 2019.

Nevertheless, **global upstream deal count decreased 14% in 2018, to a three-year low**, with the decline exacerbated by oil price downfall during the 4Q2018, and the **global upstream M&A transaction value correspondingly fell by 9%** to $128Bn (Figure 31). These numbers also represent a six-year minimum, since the 20-year peak of 2012 (Appendix 9).

Figure 31 – Upstream global deal count (#) and value ($Bn)



Source: *IHS Markit M&A Database*

Industry Trends

Technological advancements around the industry will continue to evolve and provide a broader future energy landscape, i) expanding the frontiers of Upstream exploration and ii) focusing in the concerns around global warming, accelerating the development of energy paths toward lower emissions.

Upstream exploration

Recent technological developments, mainly related to the tight oil exploration allowed the exploration of previously inaccessible or economic unviable reserves, namely **seismic survey**, **hydraulic fracturing** and **directional drilling**.

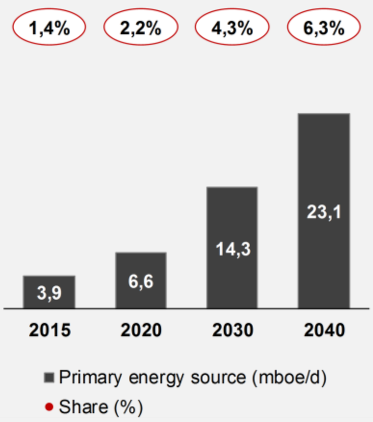
Additionally, to further explore already developed reserves, **enhanced oil recovery (EOR)** technology allow to increase exploration sites lifespan of mature oil and gas fields.

Power generation and power storage

Natural Gas, the far least CO2-emitting fossil-fuel source, has an increasing role in power generation, being able to **replace coal** in some regions, contributing to CO2 emissions reduction. This offset, more than ecological motivations, is due to financial reasons, i.e. i) cheap and abundant resources provided mainly by US **shale gas boom** and ii) **Combined-Cycle Gas Turbine (CCGT)** is the most efficient technology used in for large power plants reaching 62.2% net efficiency (the current world best).

Nevertheless, **renewables sources**[14] will increase their role in the strategy to reduce Greenhouse Gas (GHG) emissions (Figure 32). In fact, substantial advances have been achieved, mainly in **wind and solar generation**, allowing these technologies to be competitive by driving down the power generation costs faster than expected. Wind turbines, for example, have expanded the range of wind speeds that can be accommodated, both for low-speed and high-speed wind. In appropriate areas – mainly near-coastal or offshore – a capacity factor of nearly 50% can be achieved. In the case of solar, the efficiency of photovoltaic (PV) cells is constantly increasing while their production costs have undergone a steep decline over the past 10–15 years. It can be expected that the costs of wind and solar power will decline

Figure 32 – Wind, solar and other renewables weight in primary energy sources



Source: *World Oil Outlook 2040, OPEC 2018*

[13] Typically, these transactions involve the company selling minority or majority stakes from assets or projects that tend to be mature and operationally efficient. These assets are, therefore, very attractive to investors due to their low risk profile and stable cash-flows.
[14] Wind, solar and others (not including hydro and biomass).

further in the foreseeable future. However, the most serious drawback for these technologies is the disadvantage of a limited (in the case of wind) or non-existent baseload capability (in the case of solar).

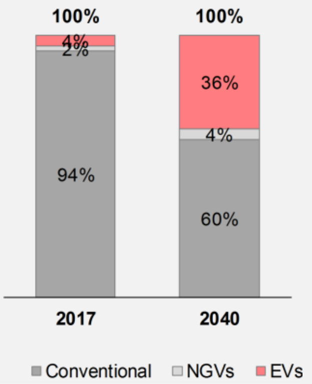
This disadvantage of renewable is somehow offset by **power storage** technological development, which may capture and later reproduce power at the required cost and capacity level. However, given current and near-future battery technology – mainly lithium-ion – competitive large-scale power storage seems to be very unlikely when compared to fossil-fuel back-up plants.

Energy Transition and Electrification

The Energy Transition pathway toward the transformation of the global energy sector from fossil-based energy to low/zero-carbon technologies is unstoppable, with companies evolving and adapting their business models to meet this trend.

The ongoing, and at least already partially successful, introduction of **electric vehicles** (EV) as a complement to the internal combustion engine (ICE) is an important development for the energy market, although in many aspects ICE still have substantial potential for further developments. In this field, it is expected that EV, including battery electric and plug-in hybrid electric vehicles (PHEV), experience a significant growth to achieve a **36% of passenger fleet share in 2040**. Both natural gas passenger cars and fuel cell vehicles (FCV) are not expected to witness the same growth and tend to maintain as a niche market (Figure 33).

Figure 33 – Share of new passenger car sales by powertrain (%)



Source: *World Oil Outlook 2040, OPEC 2018*

Carbon Capture, Use and Storage

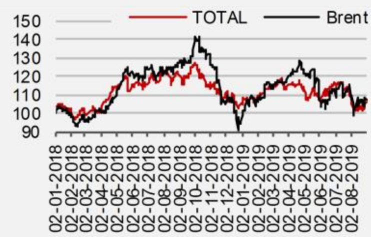
Even with a considerable up-scaling of the use of renewables for power generation fossil fuels will remain essential to satisfy the world's energy demand in a reliable and secure way. To reduce GHG emissions, and to comply with the Paris Agreement, **carbon capture and storage (CCS)**, as well as **carbon capture and utilization (CCU)**, has garnered more space in public discussion as a mean to avoid the direct release of CO2.

Some oil and gas producers have had positive experiences with re-injecting CO2 into oil wells, which suggests that CCS is a safe and technically viable strategy. However, for geological and political reasons, CCS is likely to remain applicable only in certain locations.

Oil & Gas Key Drivers of Profitability

Commodities price is the Oil & Gas industry most relevant profitability driver, impacting directly the company's profitability (Figure 34 and Appendix 15). Additionally, this is also the most difficult driver to manage, because it results from the match of supply and demand formed in the market, where no individual player has the direct ability to affect. Given this, companies can only act over it by taking long-term contracts or developing a hedging strategy with derivatives. In addition, commodities price dictates which rigs are profitable, conditioning CAPEX and production volume and stating the importance of **rig portfolio management**.

Figure 34 – TOTAL price vs. Brent evolution (Base year analysis)



Source: *Author analysis*

Nevertheless, to be profitable and create value, companies can lever other value drivers along the value chain, such as **refinery yield**, **refining flexibility and margin**, among others.

Major players in the Oil & Gas industry also add enterprise value through **synergies capture over the value chain** (Appendix 6 and Appendix 7), through vertical integration, and focused **M&A strategy** (Appendix 9).

Competitive Positioning

Peers identification

Several financial agencies have industry classification systems that can be used to identify industry peers.

The BICS classification from Bloomberg cluster companies according to their business and value chain activities. The major Oil & Gas companies, that operate along the value chain, are classified as "**Integrated Oils**".

Beyond the industry classification and operating model, the peer group should consider companies with the same characteristics. **Considering the market capitalization and the ownership type, it is possible to select the most similar peer group that include 5 companies: Exxon Mobil, Chevron, Royal Dutch Shell, TOTAL and BP** (Figure 35 and Appendix 36).

Peers strategy

Given the short-term uncertainty around global economy, companies tend to maintain **capital discipline**, focus on **productivity improvements** and applying **new technology**. In the long term, they need to apply a critical **portfolio management**, to make them **profitable against low commodities prices environements** and adapt to a **low carbon** world.

Figure 35 – BICS Integrated Oils ranked by market cap (€M)

Rank	Company	Market Cap. (€bn)	Ownership	Relevant peer
1	EXXON MOBIL CORP	274.968	POC	✓
2	CHEVRON CORP	208.113	POC	✓
3	ROYAL DUTCH SH-A	205.272	POC	✓
4	PETROCHINA-H	139.918	NOC	-
5	TOTAL SA	124.102	POC	✓
6	BP PLC	115.199	POC	✓
7	PETROBRAS-PREF	83.113	NOC	-
8	SINOPEC CORP-H	77.906	NOC	-
9	GAZPROM	77.395	NOC	-
10	ROSNEFT	61.306	NOC	-

Source: *Bloomberg (August 2019) and Author analysis*

SWOT Analysis

Figure 36 – SWOT analysis

Strengths

- **Integrated business model**, capturing margins and synergies along the value chain
- **Full pipeline of new projects** (e.g. exploration discovery of Brulpadda offshore (South Africa) and Glengorm (UK); signed agreement with Papua New Guinea for new LNG project; second development phase at Mero field (Brazil); third development phase at Dunga field (Kazakhstan); production start at Egina field (Nigeria), Kaombo Sul (Angola), Culzean (UK) and Cameron LNG (US)
- **Strong M&A strategy** to increasing presence in value chain (e.g. Acquisition of Engie's LNG business, becoming the second largest publicly traded LNG player in the World)
- **Accelerating the growth of low carbon power generation and energy efficiency business** (e.g. organic growth of GRP segment and acquisition of Direct Energie)
- **Strategic agreements and partnerships** (eg. engineering studies for a giant petrochemical complex with Saudi Aramco)
- **Expansion in fast-growing markets** (eg. partnership with Adani Group in India to develop LNG business and retail fuel)
- **Financial sustainability** (eg. gearing ratio bellow 20%)

Weaknesses

- **Upstream sites shutted down** – Balhaf, Yemen LNG site stopped its commercial production and export of LNG, in April 2015, due to insecurity conditions in its vicinity)
- **Exploitation permits expiration** (eg. Mahakam, Indonesia)
- **Refinery shutdown** – Grandpuit, France – and lower throughput – Leuna, Germany due to contaminated crude from Russia
- **Company transactions under investigation of regulatory agencies** – TOTAL Gas & Power North America, Inc. received a Notice of Alleged Violations from the US Federal Energy Regulatory Commission, in September 2015, to enforce an investigation over the natural gas trading activities from June 2009 to June 2012

Opportunities

- **Oil and gas rising stable growth demand**
- **New high growing business** (e.g. renewable energy production, energy efficiency solutions, batteries and energy storage solutions, CCUS solutions)
- **Asset portfolio optimization** to improve efficiency and break-even reduction

Threats

- **World GDP slowdown**
- **Commodities price volatility**
- **Geopolitical context** (e.g. political instability, economic sanctions and terrorist threats)
- **Energy transition trends and low carbon policies**
- **Resources availability** and significant discovery of new reserves
- **Adverse weather conditions and natural disasters**

Source: *Author analysis*

Porter's 5 Forces

Considering the Porter's 5 Forces Framework, the highest threat in the industry is the rivalry among existing competitors (Figure 37).

Threat of new entrants | LOW (2)

The threat of newcomers into the industry is relatively low, given the following factors:

- **Restrictive government policies** and competitive processes to obtain **production licensing**, which stands for long term and protect the current players;
- **Need of high capital requirements** (WC and CAPEX), in all stages of the value chain, from Exploration (where investments do not have a guaranteed success) to Refining (with large scale facilities) and R&D (for new technology e new products);
- **Need of large economies of scale**, being necessary a high level of production to reach the break-even and dilute the infrastructure fixed costs;
- **Difficult access to distribution channels**, dominated by major companies that are vertically integrated, operating in almost every stage of the value chain; and,
- **Expected retaliation from actual players**, with substantial financial resources to overcome almost any strategy from newcomers, and with a track record of M&A processes over smaller players.

Bargaining power of suppliers | MEDIUM (3)

Given that the major players in the industry are vertically integrated throughout the value chain, the most relevant suppliers are oil producer countries, because of the following factors:

- **States detain the power to allocate the exploration and production licensing**;
- There are **no alternative substitute products**;
- **Oil producer countries cartelization, with OPEC having a major market share** (Figure 38); and,
- **Oil producer countries might integrate forward in the value chain**, creating a NOC to explore their own national resources.

Although this is the powerful side of the negotiation, some factors might offset this power, such as:

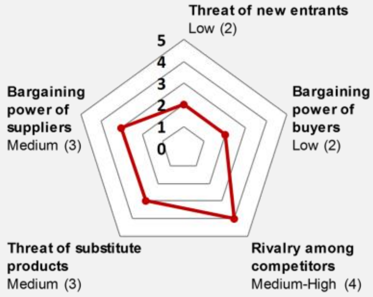
- **Disruption in cartel organization** (e.g. Qatar terminated its membership on January 2019, due to a political divergence with Saudi Arabia);
- **Political tension and economic sanctions** (e.g. Syria and Iran); and
- Many countries heavily depend on **oil exportation for financial stability**.

Bargaining power of buyers | LOW (2)

Bargaining power of buyers is relatively small, by the following factors:

- **Vertical integration over the value chain and cartelization** within the industry gives companies a higher bargaining power than its customers;

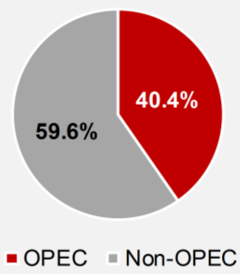
Figure 37 – Porter's 5 Forces



Legend: Scale of 1 (lower threats to industry profitability) to 5 (higher threats to industry profitability)

Source: *Michael E. Porter framework; Author analysis*

Figure 38 – OPEC supply market share (%, 2017)



Source: *World Oil Outlook 2040, OPEC 2018*

- **Massive group of different kinds of buyers**, comprising since single customers (e.g. refined products), to industries (e.g. petrochemical) and state companies/incumbents (e.g. gas contracts);
- **Price determined in the market** (match of supply and demand), being the three main quotations the Brent Blend, the West Texas Intermediate, and the Dubai/Oman;
- **Buyers are not price sensitive**, given that there is no viable solution to massive alternative product substitution; and,
- **High costumer switching costs**, because changing from oil or gas, and other petrochemical or derivatives, to another source of energy is expansive and only possible in the long run.

Threat of substitute products or services | MEDIUM (3)

The actual threat of substitute products is relatively low, given that:

- **No viable solution to massive substitution of plastic and most of petrochemicals**;
- **Other current sources of energy tend to lose importance in global energy mix**, for environmental (e.g. coal is the dirtiest source of energy in CO2 emissions) and political reasons (e.g. reduction of nuclear mix in France, to 50% in 2035); and,
- **Alternative sources only offset the rising demand for energy**, doesn't being expected to substitute hydrocarbons in the short and mid-term.

Despite this, the threat of substitute products tends to rise in the mid-term and long-term, with the search and development of alternative fuels (e.g. ethanol from Brazil) and expansion of renewable energy production (e.g. wind and solar).

Rivalry among existing competitors | MEDIUM-HIGH (4)

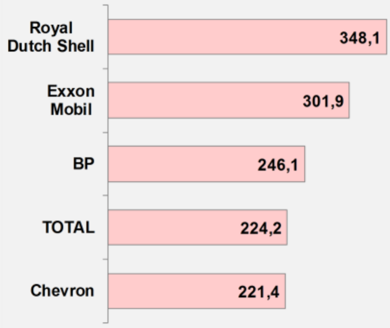
Being this industry a mature oligopoly, there is a medium-high intensity of rivalry, given that:

- There are **many players**, and some of them are **roughly equal in size and power** (e.g. top 5 POC) (Figure 39);
- **Industry is slightly growing** (Figure 40), so players must **fight for additional market share**;
- **NOC might not act based on economic rationality** and instead pursue a political agenda;
- **Final products have minor or no differentiation**; and,
- **High exit barriers due to decommissioning costs** of production stoppage (e.g. costs of shut down a well or to abandon a refinery).

Although the previous factors, some characteristics of the industry partially offset the competition level, such as:

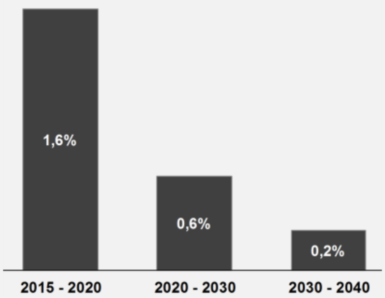
- **Players do not compete on price**, which is formed in the market by supply and demand match; and,
- **Players try to differentiate on brand and services** delivered.

Figure 39 – IOC peer group Total Assets (€M, 2018YE)



Source: *Bloomberg*

Figure 40 – Long-term Oil demand growth rates (% p.a.)



Source: *World Oil Outlook 2040, OPEC 2018*

5. Investment Summary

TOTAL has a **BUY recommendation**, with a **2020YE PT of €59.3/share**, meaning an **upside potential of 31%**, or a **potential annualized return of 22%**, against the closing price of €45.4 at August 30th, 2019, but with **high risk** (Figure 41).

The current undervaluation of TOTAL shares is mainly explainable due to i) the pessimist expectations on global economy growth, that directly impacts on the world energy demand, ii) the exposure to commodities price volatility, iii) geopolitical instability and iv) uncertainty about the energy transition trend rhythm.

With respect to TOTAL business model, its worldwide integrated operating model provides a natural hedging, smoothing the business running across economic and commodity cycles, and the investment discipline and asset rotation strategy enables the company to face lower commodities prices environments remaining profitable. In fact, **TOTAL revenues grown at +6.5% 2015-2018 CAGR** and it is expected to grow at a **+4.5% 2018-2023F CAGR**.

Regarding the forthcoming industry trends, TOTAL has a focused strategy that integrates the challenges of climate change. Regarding this, it is expected that the Gas, Renewables & Power business segment, that includes the **low carbon power generation and energy efficiency business, grow from 7.1% share of TOTAL revenues[15] in 2018 to 21.5% in 2023F**.

In addition, TOTAL solid financial position and commitment to the current **shareholder return policy**, even in lower-earning years, makes possible to believe in the **dividend increase of +10% and the buyback program of up to $5 billion[16] over the 2018-2020 period**.

Valuation methods

Similar PT was obtained through different absolute and relative methods, ranging from €59.3/share to €49.9/share (Figure 42).

The lowest PT obtained results from application of the WACC Method with SoP approach, which is **consistent with the business intuition of superior value added from an integrated business model** (Figure 43). Thus, the investment recommendation stands for the company valuation as a whole, which ranges from €59.7/share to €56.1/share, in the absolute valuation methods.

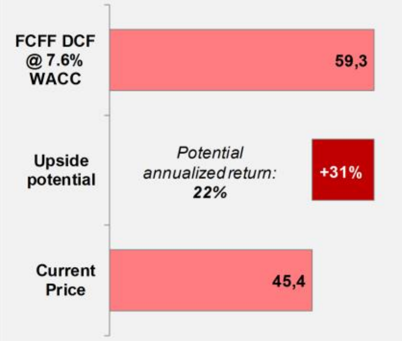
Investment risks

Investors must be aware that TOTAL business is subject to several risks that management cannot directly control, relying its action on mitigation measures.

Regarding this, it is important to mention that TOTAL stock price has a high sensitivity to **commodities price**, and that crude oil is trading with increasing volatilities in the past few years (Appendix 16).

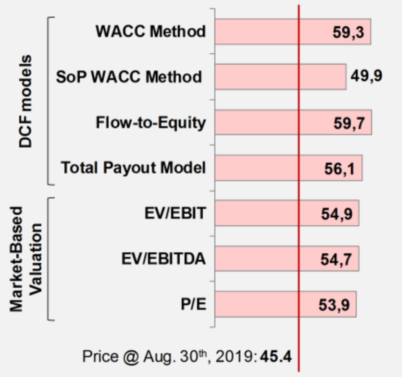
Additionally, TOTAL production sites are dispersed worldwide, including territories subjected to **geopolitical tensions** (e.g. economic sanctions and terrorist threats) and **environmental risks** (e.g. adverse weather conditions and natural disasters), which may affect production volumes. This variable may also be affected by the new development of **low carbon policies** and the **acceleration of energy transition pace**, due to international agreements and sustainable development goals.

Figure 41 – TOTAL 2020YE PT (€/share)



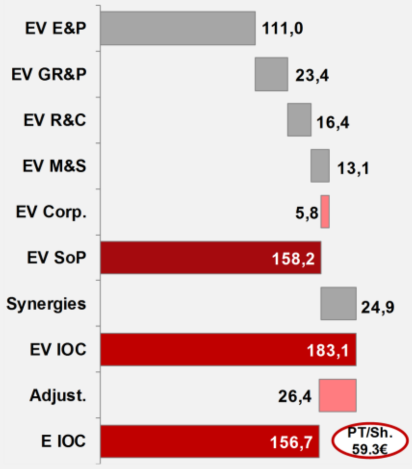
Source: *Author analysis*

Figure 42 – Valuation methods PT comparison vs. current price ($/share)



Source: *Author analysis*

Figure 43 – SoP Equity vs. IOC Equity valuation (€Bn)



Source: *Author analysis*

15 Before intercompany sales adjustment.
16 €4.2 billion at FY2018 avg. exchange rate of 1.18 EUR/USD. Buyback program considering a $60/b Brent scenario, being the total amount of the program possible of be adjusted in function of this variable.

6. Valuation

WACC Method – A Sum of the Parts (SoP) Approach

The first method followed to compute TOTAL's Price Target (PT) was a two-stage DCF, with a detailed FCFF projection for each business segment from 2019 to 2023 and a stable growth rate for the perpetual period. This approach yields a **2020YE PT of €59.3€/share** (Appendix 33) meaning an **upside potential of 31%** against the current stock price of €45.4/share.

The main factors that influence this valuation are i) the commodities market price, ii) business segments revenues growth, iii) WACC rate assumptions and iv) the terminal value and the long-run sustainable growth rate.

Commodities market price

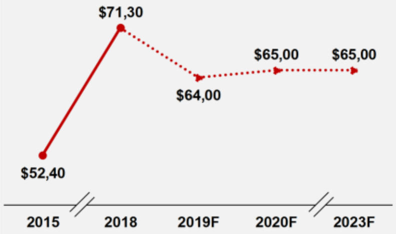
As said before, the commodities price is the dominant value driver of Oil & Gas companies, that struggle to manage its volatility (Appendix 16).

After rising for 33 months, crude oil price registered a maximum with **Brent quoting at $80.47/b in October 2018**. In the following months prices fell to a **15 months minimum of $56.46/b in 2018YE**. Already in 2019, Brent quotation registered a recovery until April, with a price of $71.20/b, and then turn back to the downward trend, quoting at **$63.03/b in 1H2019**.

This price volatility and downward trend since 4Q2018 is due to a **weaker economic sentiment about global growth**, **uncertainty about ongoing trade disputes between major economic powers** and a **disorderly Brexit**, that could lead to a **reduction in the rate of growth of international trade and oil demand**. Besides commodities, this trend also contributed to the price declines of other risky assets such as equities (Appendix 14).

Following that, TOTAL valuation is based on a scenario with a **Brent annual average forecast of $64/b for 2019 and $65/b from 2020 on**[17] (Figure 44).

Figure 44 – Brent annual average price ($/b)



Source: *World Bank; EIA Short-Term Energy Outlook (August 2019)*

Business segments revenues growth

Besides price realization, business segments revenues are a function of produced volumes.

The **Exploration & Production segment has a production growth target of 5% per year on average between 2017 and 2022F**. This seems to be a reasonable assumption given the launch of new projects (e.g. Mero 2 in Brazil, Tilenga and Kingfisher in Uganda and Arctic LNG 2 in Russia), new projects start-ups (e.g. Iara 1 in Brazil, Kaombo South in Angola, Culzean in UK and Johan Sverdrup in Norway), the ramp-ups of recent projects (e.g. Kaombo North, Egina and Ichthys) and the recent major acquisitions (e.g. Maersk Oil&Gas business segment).

The **Gas, Renewables & Power segment has planned an increase in the installed power capacity from 2.7 GW in 2018 to 10.0 GW in 2023F, and an increase in the retail B2C costumers from about 4 million in 2018 to about 7.8 million in 2023F**. These seem to be reasonable assumptions given the recent major acquisitions (e.g. SunPower, Lamparis, Direct Énergie and Engie's LNG business) and the fact that there is a strategic focus over this segment, which is the vehicle to lead the energy transition trend by the Group.

Both **Refining & Chemicals segment and Marketing & Services segment revenues were estimated using the historical CAGR from 2013 to 2018**. This

[17] Source: EIA Short-Term Energy Outlook (August 2019)

means a **refined quantity produced growth of 1.3%** for the Refining & Chemicals segment and a geographic weighted refined **petroleum product sales growth between 1.2% and 2.0%** for the Marketing & Services segment, until 2023F.

WACC rate assumptions

The discount of the FCFF followed the **WACC method given that is assumed a stable capital structure for TOTAL**. This seems a reasonable assumption given that it is defined as a strategic priority to maintain a stable gearing ratio and the top executive remuneration scheme contemplate this indicator in a quantifiable target.

The estimated **Cost of Equity** comprises a **1.2% RFR** estimated through the historical 10 years average of monthly observations of the 10-year maturity yields of German Bunds (Appendix 25) and a **9.2% ERP** computed by historical premium based on rating default spread through operation based CRP approach (Appendix 27). Different betas were computed for each business segment through a pure-play method from an industry average benchmark for unlevered beta corrected for cash[18] and for the integrated business was used a regression beta vs. the MSCI ACWI Index with the Blume adjustment, which resulted in a **0.93 beta** (Appendix 26).

The **Cost of Debt of 3.0%** was estimated through the credit default spread method, i.e. adding a country default spread and a company default spread to RFR (Appendix 28).

Thus, considering a stable **D/EV ratio around 27.7%**, it was estimated a **7.6% WACC for the integrated business** and a business segment WACC ranging between 6.9% and 9.9% (Figure 45).

Terminal value and long-run sustainable growth rate

The second stage from the DCF model consists of a perpetuity based on:

a) A **normalized FCFF for the terminal period**, to flatten the business cycle effect, obtained through a linear regression over the historical and forecasted years. This is intended to represent the expected level of mid-cycle cash flow from operations adjusted for unusual items (Appendix 30); and,

b) A **long-run sustainable growth rate computed through a Stable Growth Model** considering the TOTAL Reinvestment Rate and ROE supported by a Dupont analysis (Appendix 31).

This component contributes to around 80% of TOTAL's valuation.

WACC Method – The value of an Integrated Operating Model

In addition to the SoP Approach, it was performed the valuation of the company as a whole.

The same DCF methodology was applied, with several adaptions, namely the **WACC rate of 7.6% to the integrated business** (Figure 45).

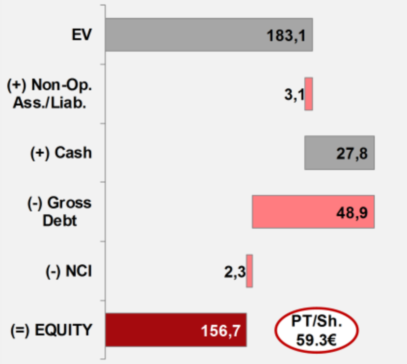
This approach resulted in a PT of **€59.3/share in 2020YE (+€9.4/share vs. SoP approach)** (Figure 46), which is consistent with the business intuition of additional value of adopting an integrated operating model (Figure 43).

Figure 45 – WACC build up

	Integrated Business	Segments E&P	G,R&P	R&C	M&S
Rf	1.2%				
Beta	0.93	1.28	0.53	1.05	0.83
ERP	9.2%				
Re	9.8%	13.0%	6.1%	10.9%	8.8%
E/(E+D)	27.7%				
Rd	3.0%				
t	36.1%				
WACC	7.6%	9.9%	5.0%	8.4%	6.9%

Source: *Author analysis*

Figure 46 – 2020YE Price Target with FCFF on Integrated company (€Bn)



Source: *Author analysis*

[18] Source: Damodaran (2019)

Flow-to-Equity Method

Given that TOTAL's valuation assumes a stable capital structure, it is also possible to compute the Equity Value through FCFE, considering the company as a whole.

This DCF, through FCFE and the Cost of Equity results in a **value per share of €59.7/share in 2020YE**, near the result obtained with the FCFF approach (Appendix 34).

Total Payout Model

Considering TOTAL's **management commitment to the defined shareholder return policy and suitable pay-out ratio** to support it, it was estimated a **€56.1/share PT in 2020YE** through a two-stages model.

The first stage considers the expected total cashflow delivered to stakeholders (dividends and share repurchases) (Figure 47).

The second stage is based on a Gordon Growth Model, implemented through a H-Model with i) an initial short-term dividend growth rate aligned with the average World GDP growth and ii) a long-term dividend growth computed through a PRAT Model (Appendix 31). It was considered a half-life of the high-growth period of 10 years, coherent with the most conservative time horizon of a potential oil demand peak[19] (Appendix 35).

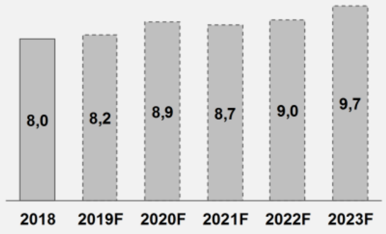
Market-Based Valuation

In addition to the previous absolute models, it was implemented a relative valuation methodology, through the peer group[20] (Appendix 36) comparison of market multiples.

In this MBV methodology, the following multiples were used (Appendix 37):

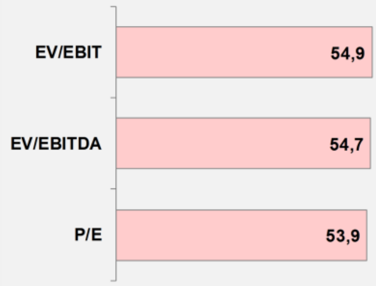
- **The EV/EBIT, with a peer average of 11.6x**, resulting in a TOTAL EV of €171.5Bn, corresponding to an Equity value of €145.1Bn, or a **price target of €54.9/share in 2020YE**;
- **The EV/EBITDA, with a peer average of 6.2x**, resulting in a TOTAL EV of €170.8Bn, corresponding to an Equity value of €144.4Bn, or a **price target of €54.7/share in 2020YE**; and,
- **The P/E, with a peer average of 14.2x**, resulting in a TOTAL Equity value of €142.3Bn, or a **price target of €53.9/share in 2020YE** (Figure 48).

Figure 47 – Shareholders total cashflow (€Bn)



Source: *Author analysis*

Figure 48 – Market-Based Valuation (€/share)



Source: *Author analysis*

[19] While OPEC (WOO 2040) does not expect an oil demand peak before 2040, Wood Mackenzie (July 2019) forecasts an Oil demand peak in 2036 and McKinsey&Co. (August 2019) expect this to happen in 2033.

[20] Considering the peer group defined in Chapter 4.

7. Financial Analysis

Focus on operational efficiency

After the **increase of TOTAL sales, from €149,071 million to €177,429 million over the 2015-2018 period**, meaning a 6.0% CAGR after a upward trend of oil prices, **and to €217,468 million at 2023F**, with CAGR slowing down to 4.2% given the uncertainty of economic evolution and commodities prices previously mentioned, TOTAL is able to register an improvement on its operational efficiency, with an increase of **Asset Turnover from 0.75x in 2015 to 0.83x in 2018, and then to 0.90x in 2023F**.

Regarding **EBIT Margin, it rose from 2.9% to 7.9% in 2015-2018 period and should keep the upward trend towards 9.8% in 2023F** (Figure 49).

Reliable solvency and stable capital structure

Given the higher business performance, TOTAL improved its solvency ratios, with an increase in the **Interest Coverage Ratio from 4.9x to 7.8x in 2015-2018 and to 13.7x in 2023F**. The **Debt to EBITDA ratio also has an improvement from 8.5x to 4.7x in 2015-2018 period and to 3.6x in 2023F** (Figure 50).

TOTAL's capital structure is expected to be relatively stable. After decreasing from **57% to 54% in the 2015-2018 period, the Debt Ratio is expected to maintain around 53% until 2023F** and the **Equity Multiplier ranges around the mean value of 2.2** over the projected period (Figure 51).

Improving profitability

Looking for profitability ratios, TOTAL has reliable and improving figures.

The **Net Profit Margin rose from 2.9% to 5.5% in 2015-2018 period and to 6.5% in 2023F**. Regarding **ROE, TOTAL figures rose from 5.2% to 9.4% in the 2015-2018 period and to 12.2% in 2023F** (Figure 52), as a consequence of Asset Turnover increasing that offsets the flat Equity Multiplier period. Both ROIC and ROCE also show improvement during the analyzed and projected periods (Appendix 23).

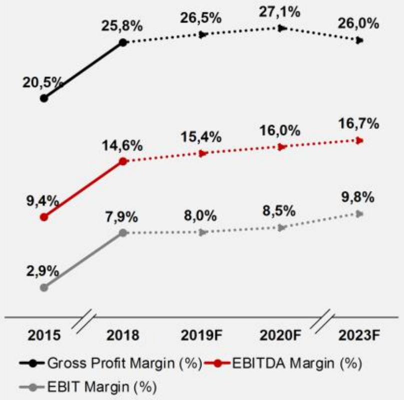
Solid cash generation

TOTAL has a **Cash Ratio ranged between 0.5x and 0.6x in the 2015-2018 period, stabilizing on 0.6x in 2023F**, and the **Cash Cycle decreased from 38 to 26 days in 2015-2018 and expected to be near flat until 2023F** (Appendix 23).

The CFO improved from **€17,982 million to €20,935 million over the 2015-2018 period and to €27,656 million at 2023F**, meaning a 5.7% CAGR in the forecasted period (Appendix 19).

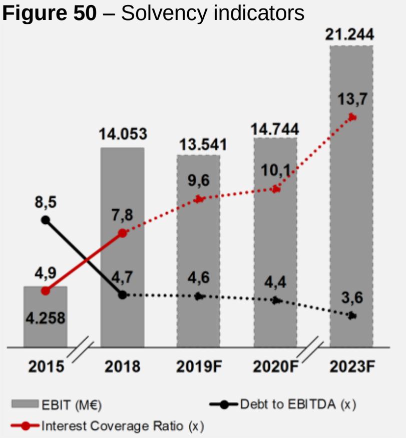
This solid cash generation is the cornerstone of TOTAL's shareholder return policy.

Figure 49 – Business margins



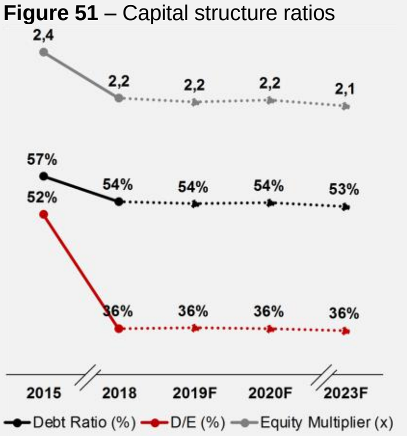
Source: *Author analysis*

Figure 50 – Solvency indicators



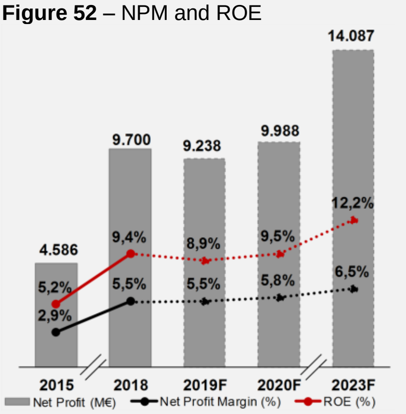
Source: *Author analysis*

Figure 51 – Capital structure ratios



Source: *Author analysis*

Figure 52 – NPM and ROE



Source: *Author analysis*

8. Investment Risks

TOTAL faces both external and internal risks, that could have material and adverse impact in its business. Among the external risks – not directly controllable by the company – it is possible to include macroeconomic risks, political and regulatory risks, natural risk and market and financial risks. Among the internal risks – where the company has a field of action – we may consider operational risks.

Macroeconomic risks

World GDP (ME01)

Energy demand depends on the strength of the global economy. Although there is a long-term growth expectation, in the short-term World economy is living an uncertainty moment, with the IMF reviewing in less 0.4 percentual points the 2019F World's real GDP growth, from its last forecast (Figure 54). This is driven by **trade disputes between major economic powers** and a potential **disorderly Brexit**. A **world GDP decrease or slowdown impacts negatively on energy demand**, and thus, the oil and gas demand and TOTAL results and earnings.

Political and regulatory risks

Political instability (PR01)

TOTAL has a significant number of production sites and reserves located in politically and social unstable regions, including scenarios of **civil war** (e.g. Libya and Syria)**, social unrest and violent conflicts** (e.g. Nigeria and Venezuela)**, terrorist threats** (e.g. Libya, Syria, Iraq, Saudi Arabia) **and economic sanctions** (e.g. Libya, Syria, Iran, Cuba and Russia). Any of these events, alone or combined, could disrupt the company operations, causing declines in production or revision to reserves estimates (Figure 55 and Appendix 38).

In addition, there is also the risk of an intervention by host country authorities, with **changes to the contractual framework** of exploration and production activities, namely unilateral or cancellation of license or contractual rights, quota controls or increases in taxes and royalties, nationalization or expropriation of assets (e.g. Nigerian government is contemplating new legislation, that could increase taxes and operating costs if passed into law).

Legal and Regulation (PR02)

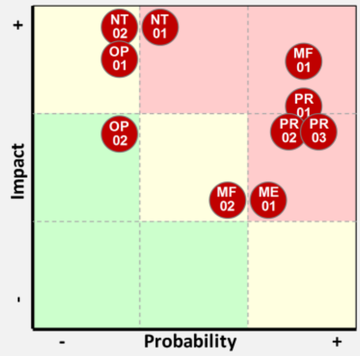
TOTAL is subjected to increasingly stringent environmental (e.g. water, air and soil protection; waste management), health (e.g. occupational safety) and safety laws (e.g. personal and property) and regulations (e.g. business activities safety; product quality) in numerous countries – particularly in Europe and United States – and may incur material related **compliance costs**.

In addition, the introduction of new laws and regulations could compel the company to **curtail, modify or cease certain operations or implement temporary shutdowns of exploration sites**, which could diminish productivity and have a material adverse impact in TOTAL financial condition.

Low carbon policies (PR03)

New laws and regulation related to climate change may affect TOTAL business activities in two different ways. Firstly, an **energy transition trend acceleration** (e.g. **Paris Agreement**; **United Nations Sustainable Development Goals**), i.e. a rapidly change on energy production modes in favor of a **lower-carbon energy mix**

Figure 53 – Risk Matrix



Legend:
Impact – Economic-financial translation of potential risk impact on yield, growth, market share, operational efficiency,or organizational efficiency
Probability – Degree of likelihood of risk materialization

Source: *Author analysis and estimation*

Figure 54 – World real GDP growth (annual percent change)

Source: *IMF (August 2019)*

Figure 55 – Upstream production by region (kboe/d; 2018)

	Production (kboe/d)	Production (%)
Europe and Central Asia	909	33%
Africa (excl. North Africa)	670	24%
Middle East and North Africa	666	24%
Americas	389	14%
Asia- Pacific	141	5%
TOTAL	2.775	100%

Source: *TOTAL's Registration Document 2018* and with a more limited share of fossil fuel (e.g. **electrical vehicles** trend). And second, the growing concern of certain stakeholders with climate change, that may impact in major investment decisions and potentially change or cease certain operations or subject it to additional obligations and compliance costs.

Regulation designed to gradually limit fossil fuel use may, depending on the **GHG emission limits and timeframe**, negatively and significantly affect the development of projects and the economic value of TOTAL assets.

Natural risks

Environmental risks (NT01)

The worldwide dispersion of TOTAL assets, especially in regions with potential physical impacts of climate change, including **adverse weather conditions** and **natural disasters**, may expose the company to unpredictable operational disruption or industrial accident, with material adverse impact in its business and financial position.

Resources availability (NT02)

The company production growth relies on the delivery of its major development projects. These projects may face several difficulties, related to the **cost-effective discovery, acquisition and development of new reserves**. To maintain its profitability, TOTAL needs to **replace its reserves with economically viable new proved reserves**.

However, the **discovery and access to new or previously inaccessible fields requires increasingly advanced technology** (e.g. seismic survey, hydraulic fracturing and directional drilling) **and are increasingly rare** (Appendix 39).

In addition, several factors may undermine these activities, namely **unexpected drilling conditions** (e.g. geological nature of oil and gas fields, including pressure or unexpected heterogeneities in geological formations), or the **risk of dry holes or failure to find expected commercial quantities of hydrocarbons**. These factors could lead to cost overruns and materially affect the company financial condition.

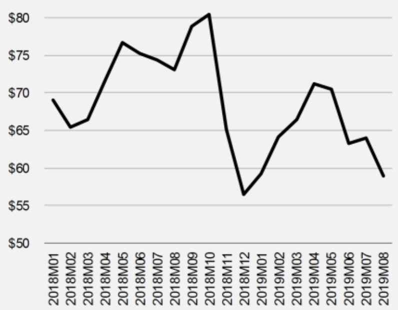
Market and financial risks

Commodities Price (MF01)

Even with an integrated operating model, TOTAL has a high sensitivity to commodities price. Since 2016 that **oil and gas markets are trading with increasing volatilities** (Appendix 16), which could lead to a **sudden fall of prices, as seen on 3Q2018 and 2Q2019** (Figure 56) and have a direct negative impact in the upstream segment revenues. The impact of this event on downstream segment depends upon the speed that finished products adjust to reflect these changes.

In addition to the adverse effect on TOTAL results and earnings, a prolonged period of low oil and gas prices could lead the company to **review its projects and the evaluation of its assets and oil and gas reserves**.

Figure 56 – Brent monthly prices ($/b)

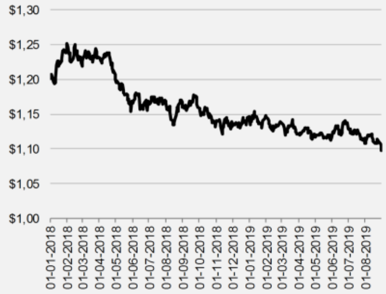


Source: *World Bank*

Exchange rates (MF02)

Being a worldwide company, TOTAL's activities are subject to **payments and receivables in different foreign currencies, mainly EUR, USD, GBP and NOK**. In addition, TOTAL uses EUR as functional currency, being the **most relevant currency exposure against USD**, given that many relevant transactions are made in this currency (e.g. oil and gas trading) (Figure 57).

Figure 57 – EUR/USD spot prices



Source: *Bloomberg*

Operational risks

Industrial risks (OP01)

TOTAL activities involve a wide range of operational risks, such as **explosions, fires, accidents, equipment failures, leakage of toxic products, emissions or discharges into the air, water and soil**, that can potentially cause death or injury, or impact natural resources and ecosystems. **Acts of terrorism or malicious acts** against employees, plants, exploration sites, pipelines and transportation or informatic systems could also disrupt business activities.

Although TOTAL has liability insurance contracts with third-party entities, it is not possible to guarantee that a major event won't exceed the maximum coverage provided and have a material adverse effect in TOTAL financial condition.

IT systems security (OP02)

TOTAL activities depend heavily on the reliability and security of its information technology ("IT") systems. The company IT systems, some of which managed by third parties, are susceptible to being compromised, damaged, disrupted or shutdown due to **failures during the process of upgrading or replacing software, databases or components, power or network outages, hardware failures, user errors, natural disasters or cyber-attacks**.

While the company has not experienced any such attack or major IT systems disruption that has had a material impact on its business, it is not possible to guarantee that its security measures will be enough to prevent a material disruption, breach or compromise in the future, with a potentially material adverse effect on TOTAL financial condition.

Price Target Sensitivity

Considering the risks previously stated, it was performed a simulation with combined effects to assess the Price Target sensitivity to a different range of factors and the strength of the investment recommendation against the benchmark (Figure 58).

Figure 58 – Investment recommendation system – High Risk

Investment recommendation	Threshold (annualized upside potential)
Sell	0%≤
Reduce	>0% & ≤10%
Hold	>10% & ≤20%
Buy	>20% & ≤45%
Strong Buy	>45%

Production disruption

Many different events can lead to a production break – e.g. political risks, natural risks, or operational risks – in the different activities of the value chain.

For instance, a disruption of 600 kboe/d (21.6% of TOTAL upstream production), almost the 2018FY MENA region upstream production (Figure 55), would set the Price Target to around €42.8/share, less 28% than the base case price target of €59.3/share (Figure 59).

Figure 59 – Price target sensitivity to a potential production break*

-1,000 kboe/d	-900 kboe/d	-800 kboe/d	-700 kboe/d	-600 kboe/d	-500 kboe/d	-400 kboe/d	-300 kboe/d	-200 kboe/d	-100 kboe/d	Base Case
31.7 €	34.5 €	37.2 €	40.0 €	42.8 €	45.5 €	48.3 €	51.0 €	53.8 €	56.6 €	59.3 €

**Considering a scenario of production disruption from 2020F to 2021F (2 years recovery to BaU)*

Source: *Author analysis*

Brent price vs. Upstream production growth

In this valuation, the base case for annual average **Brent price is set on $64.0/b for 2019F and $65.0/b for 2020F onwards**. It is estimated that an **increase (decrease) of $1.0/b will increase (decrease) PT in ~€2.5/share** (all other things remain equal).

The base case for **upstream production growth rate is set on 7.0% YoY for 2019F, 6.0% YoY for 2020F and 5.0% YoY for 2021F onwards**. It is estimated that an **increase (decrease) of 25bps would increase (decrease) PT in ~€1.3/share** (all other things remain equal) (Figure 60).

Figure 60 – Annual average Brent price vs. Upstream production growth rate

Upstream - Production Growth Rate for 2019F (year 0)

Annual avg. Brent price ($/b) for 2019F (year 0)	5.75%	6.00%	6.25%	6.50%	6.75%	7.0%	7.25%	7.50%	7.75%	8.00%	8.25%
$59.0	€ 41.3	€ 42.3	€ 43.4	€ 44.5	€ 45.6	€ 46.7	€ 47.8	€ 48.9	€ 50.0	€ 51.1	€ 52.2
$60.0	€ 43.6	€ 44.7	€ 45.8	€ 46.9	€ 48.1	€ 49.2	€ 50.3	€ 51.5	€ 52.6	€ 53.8	€ 54.9
$61.0	€ 46.0	€ 47.1	€ 48.3	€ 49.4	€ 50.6	€ 51.7	€ 52.9	€ 54.1	€ 55.3	€ 56.4	€ 57.7
$62.0	€ 48.4	€ 49.5	€ 50.7	€ 51.9	€ 53.1	€ 54.3	€ 55.5	€ 56.7	€ 57.9	€ 59.1	€ 60.4
$63.0	€ 50.7	€ 51.9	€ 53.1	€ 54.3	€ 55.6	€ 56.8	€ 58.0	€ 59.3	€ 60.5	€ 61.8	€ 63.1
$64.0	€ 53.1	€ 54.3	€ 55.6	€ 56.8	€ 58.1	€ 59.3	€ 60.6	€ 61.9	€ 63.2	€ 64.5	€ 65.8
$65.0	€ 55.5	€ 56.7	€ 58.0	€ 59.3	€ 60.6	€ 61.9	€ 63.2	€ 64.5	€ 65.8	€ 67.1	€ 68.5
$66.0	€ 57.8	€ 59.1	€ 60.4	€ 61.7	€ 63.1	€ 64.4	€ 65.7	€ 67.1	€ 68.4	€ 69.8	€ 71.2
$67.0	€ 60.2	€ 61.5	€ 62.8	€ 64.2	€ 65.6	€ 66.9	€ 68.3	€ 69.7	€ 71.1	€ 72.5	€ 73.9
$68.0	€ 62.5	€ 63.9	€ 65.3	€ 66.7	€ 68.1	€ 69.5	€ 70.9	€ 72.3	€ 73.7	€ 75.2	€ 76.6
$69.0	€ 64.9	€ 66.3	€ 67.7	€ 69.1	€ 70.6	€ 72.0	€ 73.4	€ 74.9	€ 76.4	€ 77.8	€ 79.3

€ -2.5/sh. — Base Case — € +2.5/sh.

€ -1.3/sh. — Base Case — € +1.3/sh.

Source: *Author analysis*

Cost of Capital (WACC) vs. Long-run sustainable growth rate (g)

The **long-run sustainable growth rate**, that is set on **1.9% in the base case**, could lead to **an increase (decrease) of PT in ~€0.9-1.0/share, for each increase (decrease) of 10bps** (all other things remain equal).

The **WACC rate**, that is set on **7.6% in the base case**, has not a linear relationship with PT. Each **additional 10bps will decrease PT in ~€2.0-2.7/share** and each **less 10bps will increase PT in ~€3.0-4.4/share** (all other things remain equal) (Figure 61).

Figure 61 – Cost of Capital (WACC) vs. Long-run sustainable growth rate (g)

Long-run sustainable growth rate (g)

Cost of Capital (WACC)	1.4%	1.5%	1.6%	1.7%	1.8%	1.9%	2.0%	2.1%	2.2%	2.3%	2.4%
6.4%	€ 70.2	€ 71.5	€ 72.9	€ 74.4	€ 75.9	€ 77.5	€ 79.1	€ 80.9	€ 82.7	€ 84.6	€ 86.6
6.6%	€ 66.5	€ 67.7	€ 69.0	€ 70.3	€ 71.7	€ 73.1	€ 74.6	€ 76.1	€ 77.7	€ 79.4	€ 81.2
6.9%	€ 63.2	€ 64.3	€ 65.5	€ 66.6	€ 67.9	€ 69.1	€ 70.5	€ 71.8	€ 73.3	€ 74.8	€ 76.4
7.1%	€ 60.2	€ 61.2	€ 62.2	€ 63.3	€ 64.4	€ 65.6	€ 66.7	€ 68.0	€ 69.3	€ 70.6	€ 72.0
7.4%	€ 57.4	€ 58.3	€ 59.3	€ 60.3	€ 61.3	€ 62.3	€ 63.4	€ 64.5	€ 65.7	€ 66.9	€ 68.1
7.6%	€ 54.9	€ 55.7	€ 56.6	€ 57.5	€ 58.4	€ 59.3	€ 60.3	€ 61.3	€ 62.4	€ 63.5	€ 64.6
7.9%	€ 52.5	€ 53.3	€ 54.1	€ 54.9	€ 55.7	€ 56.6	€ 57.5	€ 58.4	€ 59.4	€ 60.4	€ 61.4
8.1%	€ 50.4	€ 51.1	€ 51.8	€ 52.5	€ 53.3	€ 54.1	€ 54.9	€ 55.7	€ 56.6	€ 57.5	€ 58.5
8.4%	€ 48.3	€ 49.0	€ 49.7	€ 50.3	€ 51.0	€ 51.8	€ 52.5	€ 53.3	€ 54.1	€ 54.9	€ 55.8
8.6%	€ 46.5	€ 47.1	€ 47.7	€ 48.3	€ 49.0	€ 49.6	€ 50.3	€ 51.0	€ 51.8	€ 52.5	€ 53.3
8.9%	€ 44.7	€ 45.3	€ 45.8	€ 46.4	€ 47.0	€ 47.6	€ 48.3	€ 48.9	€ 49.6	€ 50.3	€ 51.0

€ +3.0 to 4.4 /sh. — Base Case — € -2.0 to 2.7 /sh.

~ € -0.9/sh. — Base Case — ~ € +1.0/sh.

Source: *Author analysis*

Energy transition pace

Being the energy transition a major trend in the industry, it is relevant to assess its impact over TOTAL valuation. Regarding this, it was simulated **different growth paths for the Gas, Renewable & Power business segments**.

A slowdown in this business segment growth, for 0.8x vs. the base case (1x) in the forecasted period, the PT would decrease PT in €2.4/share (all other things remain equal).

In opposite direction, an acceleration in this business segment growth, for 1.2x vs. the base case (1x) in the forecasted period, the PT would increase €2.7/share (all other things remain equal) (Figure 62).

Figure 62 – PT sensitivity to different growth rates of GR&P business segment

Energy Transition pace (GRP segment Volume growth rate; Base Case = 1x)

0,5x	0,6x	0,7x	0,8x	0,9x	1x	1,1x	1,2x	1,3x	1,4x	1,5x
53,7 €	54,7 €	55,8 €	56,9 €	58,1 €	59,3 €	60,6 €	62,0 €	63,5 €	65,0 €	66,6 €

Source: *Author analysis*

Monte Carlo Simulation

As a complementary analysis on PT sensitivity, a Monte Carlo Simulation was made, considering the simultaneous changes in the following key value drivers: i) annual average Brent price, ii) upstream production growth rate, iii) the Cost of Capital (WACC) and iv) the long-run sustainable growth rate (g).

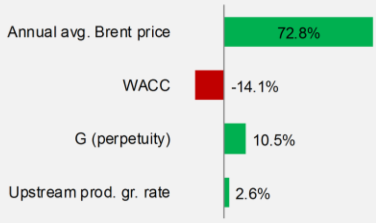
From this analysis results a **mean value of €59.35**, consistent with the previously estimated PT, and a **74% of Buy/ Strong Buy probability**, supporting the stated Buy recommendation (Figure 63).

In addition, this analysis also proves that the **commodity price is the most relevant key driver to the PT definition and company profitability** (Figure 64).

Figure 63 – Monte Carlo simulation output

Source: *Author analysis*

Figure 64 – PT assumptions sensitivity

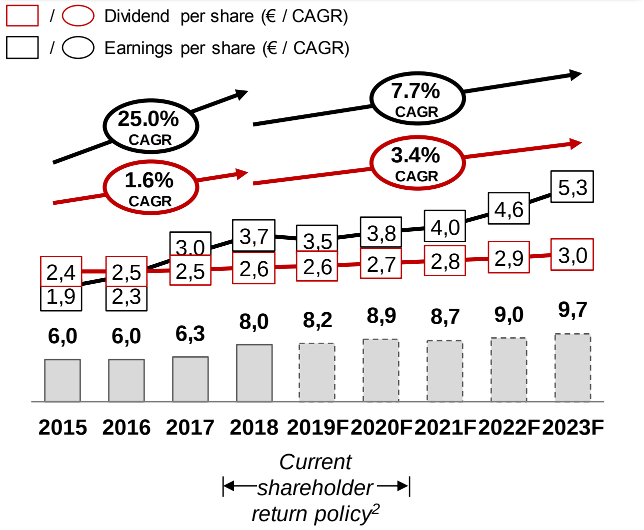


Source: *Author analysis*

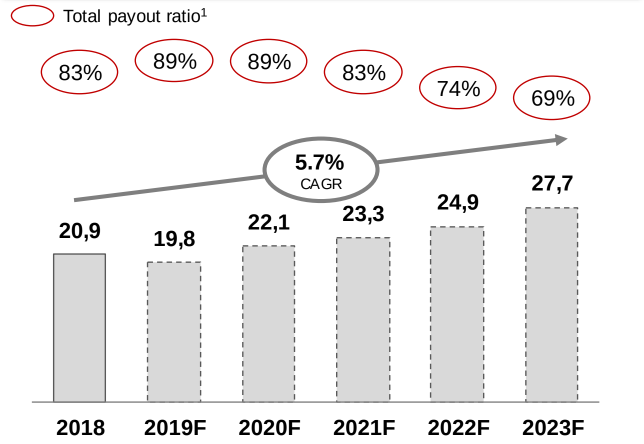
Appendices

Appendix 1: "Rule of thumb" shareholder return policy

Shareholders remuneration[1] (€Bn)



Cashflow from operations (€Bn)



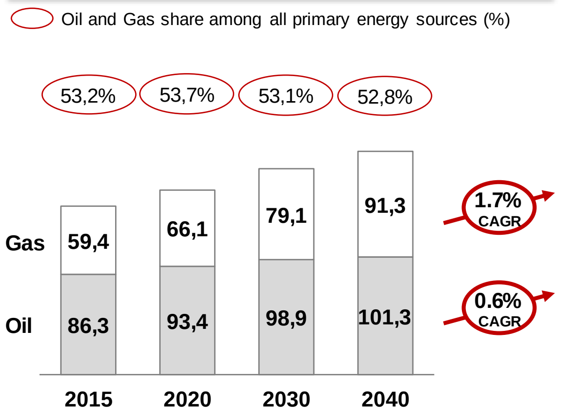
TOTAL management reiterates its shareholder return policy, which was kept even in lower-earning years.

The solid financial position and a reliable cash generation makes credible the shareholder return expectation.

1. Total payout considering dividends plus shares buyback.
2. TOTAL announced to the market a dividend increase of 10% over 2018-2020 and a buyback program of up to $5Bn (€4.2Bn at an avg. exchange rate of 1.18) over the same period.

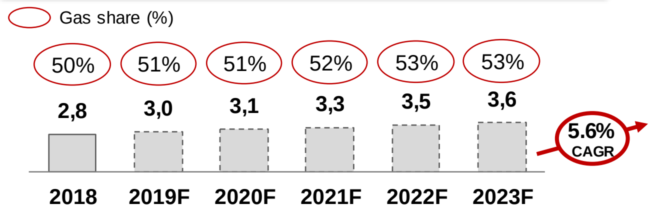
Appendix 2: Long-term steady oil and gas demand outlook

Oil and Gas global demand as primary energy source (mboe/d)

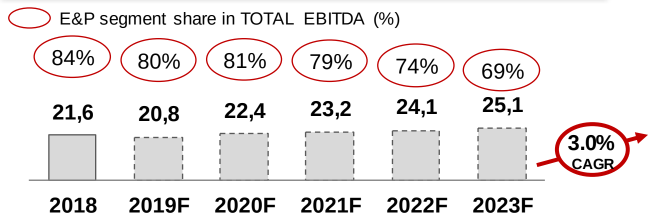


Source: World Oil Outlook 2040, OPEC 2018

TOTAL Upstream production (mboe/d)



TOTAL E&P business segment EBITDA (€Bn)



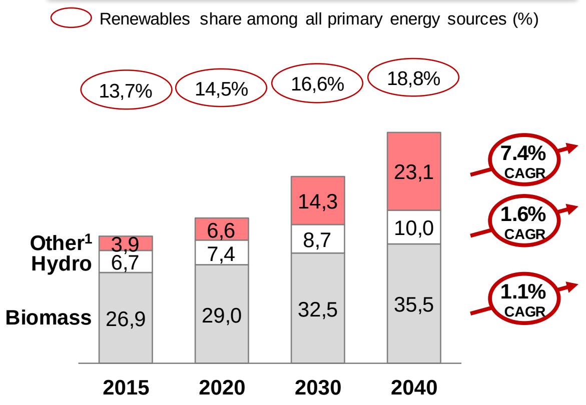
Despite relatively low demand growth rates, fossil fuels are projected to remain the dominant component in the global energy mix.

Due to its investment discipline and sustainable growth focus, it is expected that TOTAL is able to keep its Upstream production growth rates.

1. Detailed in Appendix.

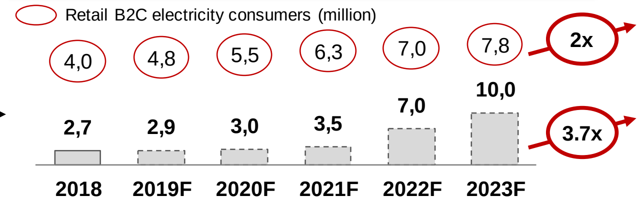
Appendix 3: Strategy set to face the future

Renewables global demand as primary energy source (mboe/d)

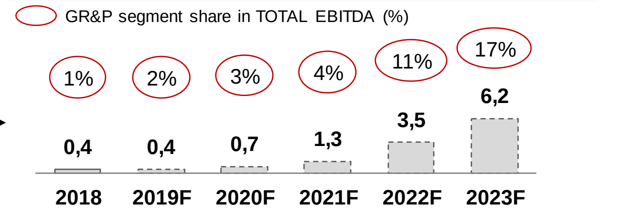


Source: World Oil Outlook 2040, OPEC 2018

TOTAL low carbon generation installed capacity (GW)



TOTAL GR&P business segment EBITDA (€Bn)

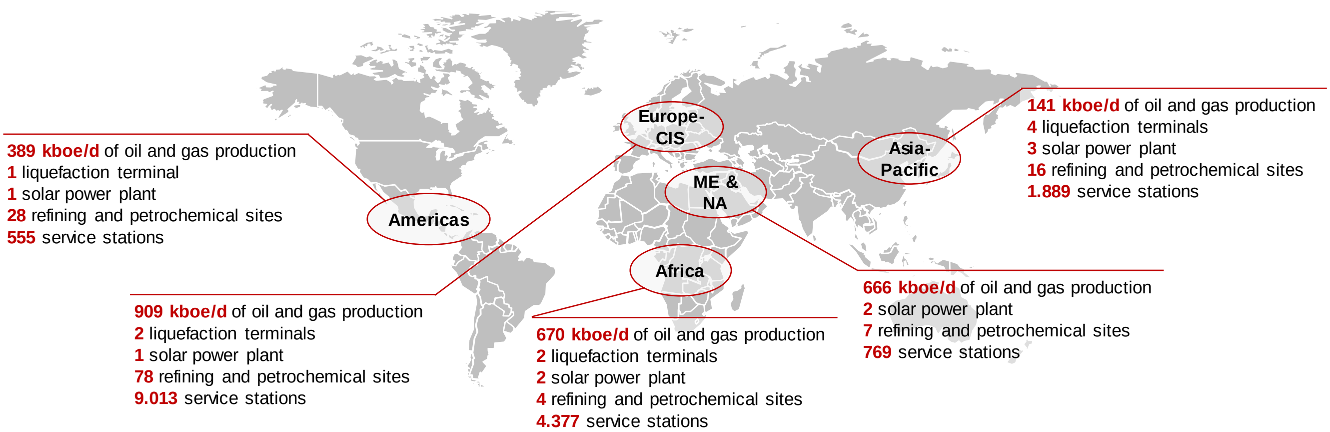


Other renewables[1] are projected to have the highest percentage growth rate among all primary energy sources[2].

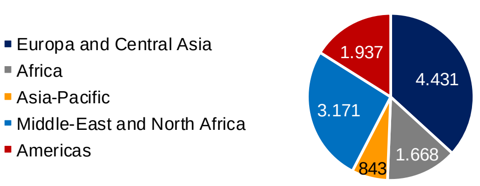
GR&P business segment EBITDA growth is driven by production growth and EBITDA Margin convergence with the industry.

1. Mainly solar, wind and geothermal.
2. Detailed in Appendix.

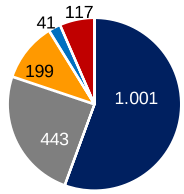
Appendix 4: TOTAL's worldwide activities



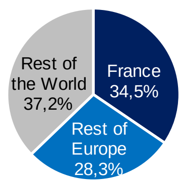
Oil & Gas proved reserves (Mboe)



Marketing & Services refined product sales (kb/d)



Employees by region



Source: TOTAL's "At a Glance" 2018; TOTAL Factbook 2018

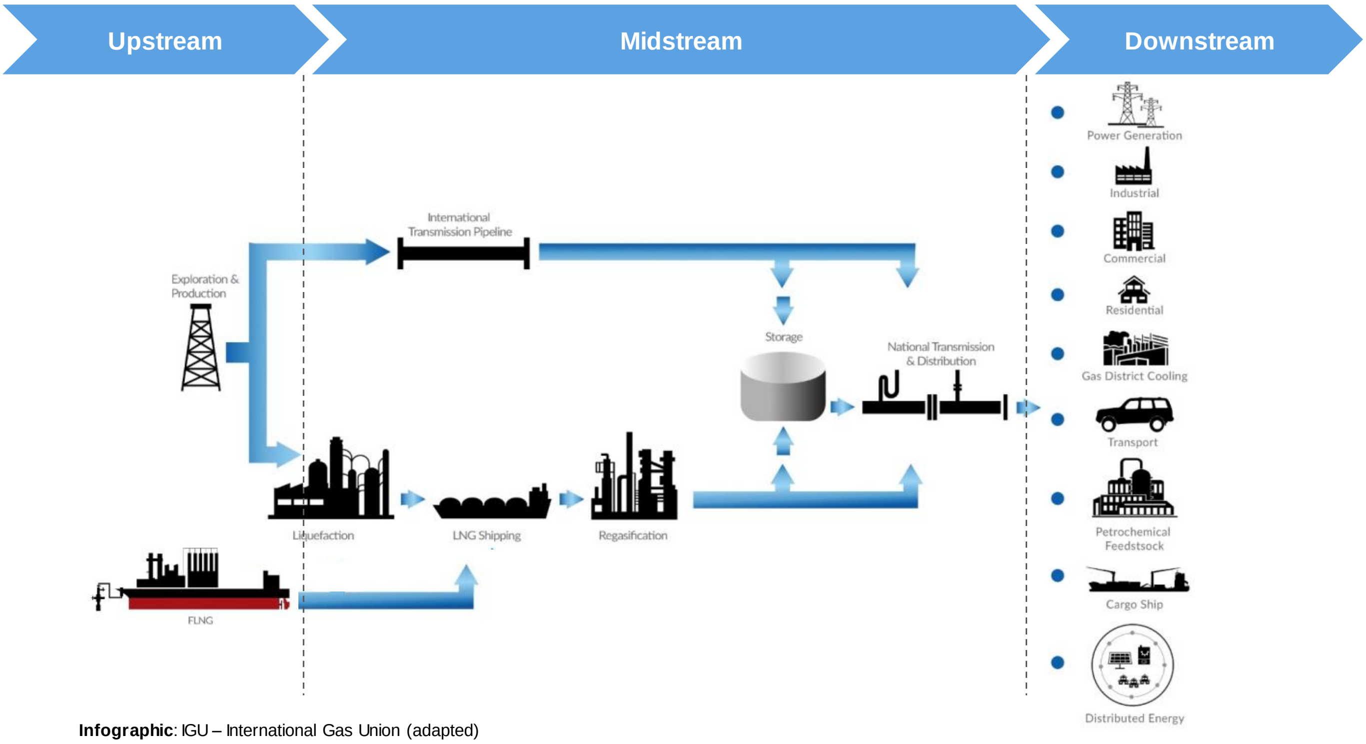
Appendix 5: TOTAL business value chain

5.1 – Oil industry value chain

Upstream		Midstream	Downstream	
Exploration • Acquire exploration rights • Seismic survey • Exploration drilling	**Development & Production** • Reservoir modeling • Well design, drilling and completion • Production modeling	**Transportation & Trade** • Transportation by pipeline, ship, train and truck • Terminals for processing, storage and distribution	**Refining, Processing & Blending** • Crude refining, processing and blending • Petrochemicals, fuels and lubricants	**Marketing & Distribution** • Wholesale • Retail • Marketing to end-user

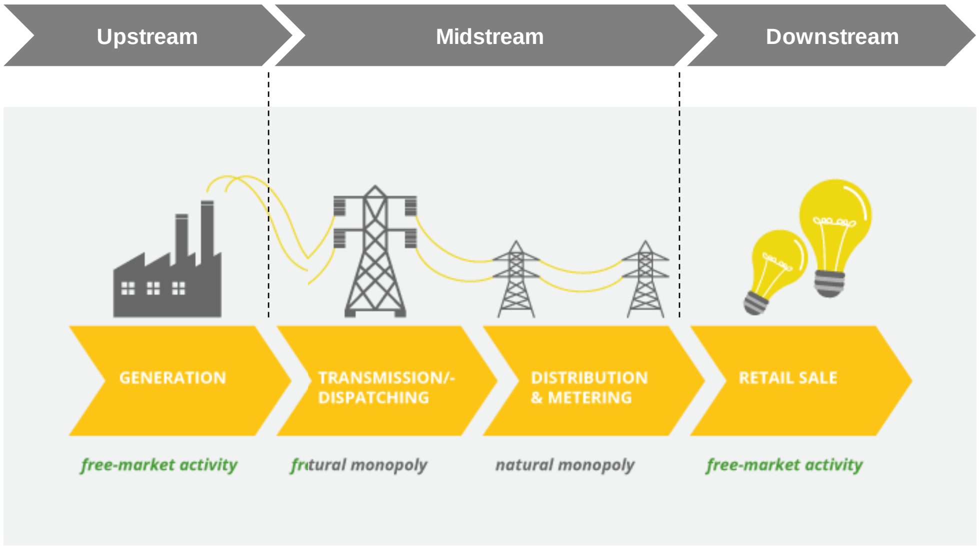
Infograpic: BP

5.2 – Natural Gas industry value chain



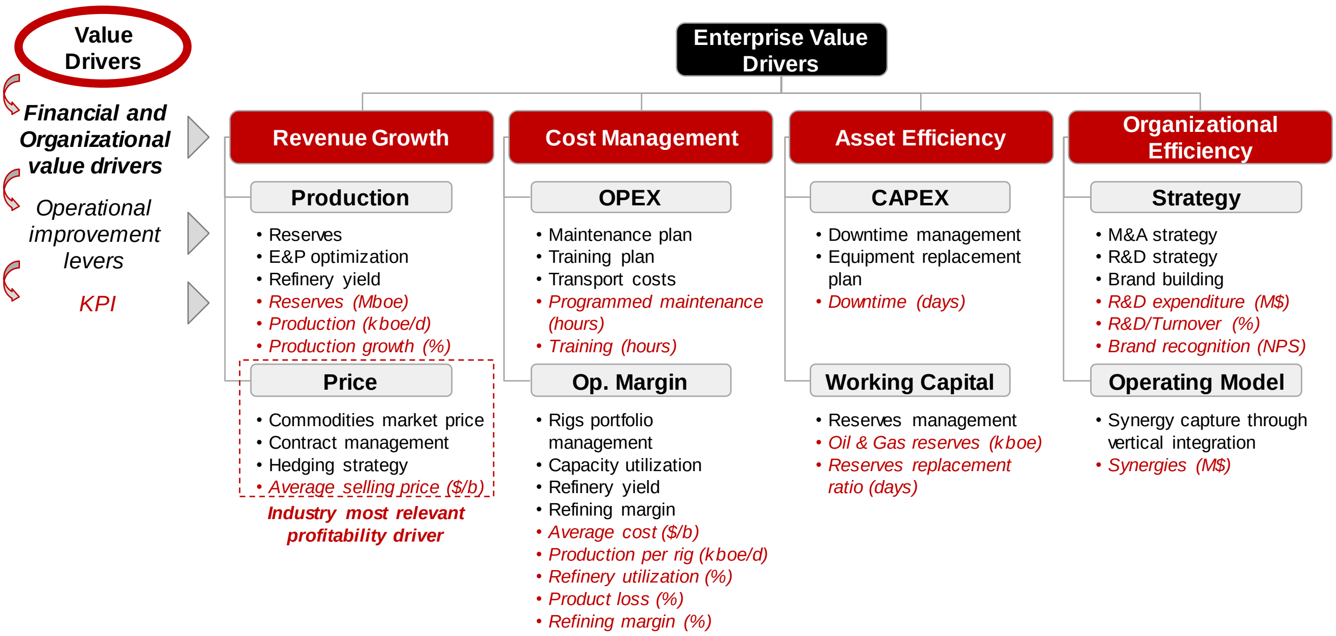
Infographic: IGU – International Gas Union (adapted)

5.3 – Electricity industry value chain



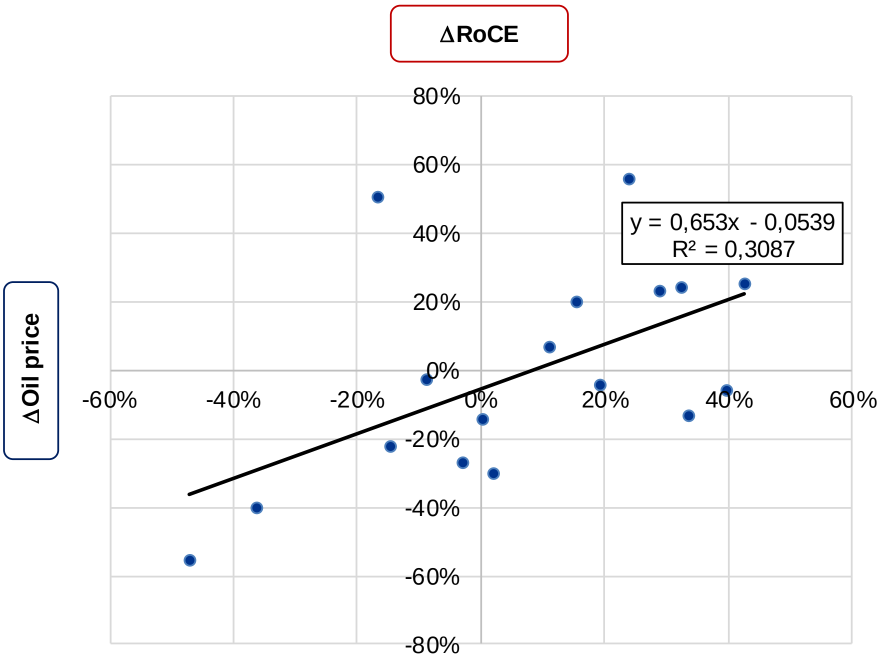
Infographic: Gruppo Hera (adapted)

Appendix 6: Oil & Gas industry key drivers of profitability



Source: Deloitte's framework (adapted);
Value drivers in Oil Companies, Institute of Management Technology, Dubai (2017);
World Bank – NOC's and Value Creation (2011)

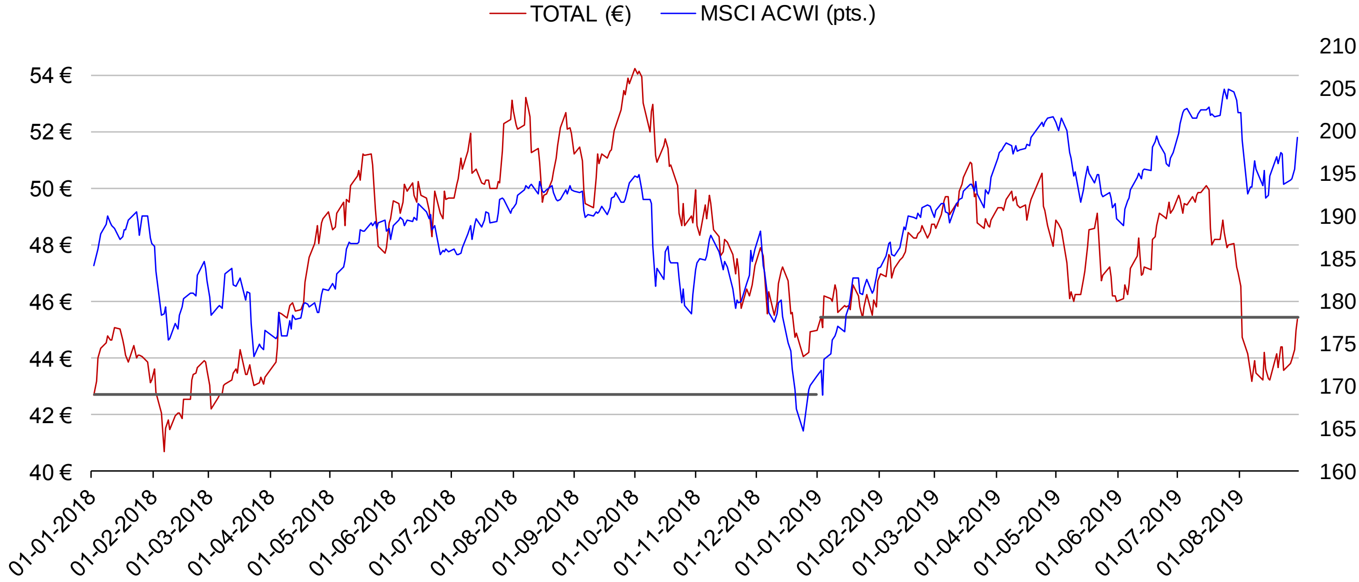
Appendix 7: Oil price impact on industry profitability



Oil price (Brent annual return) vs. Industry Avg. Return on Capital Employed (annual variation) [2000-2017 data].

Source: Bloomberg

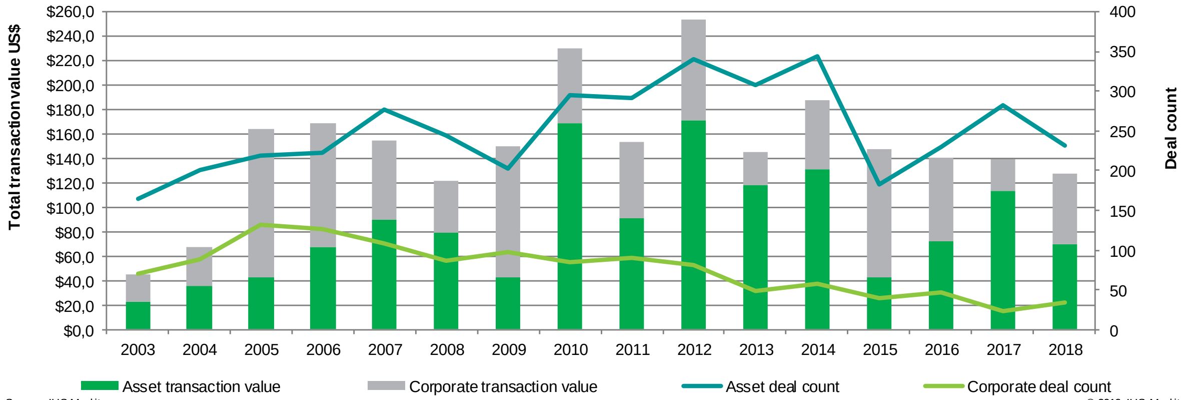
Appendix 8: TOTAL quote vs. MSCI ACWI



Source: Bloomberg; MSCI

Appendix 9: Oil & Gas industry M&A activity

Global upstream transaction value – asset vs. corporate deals



Source: IHS Markit

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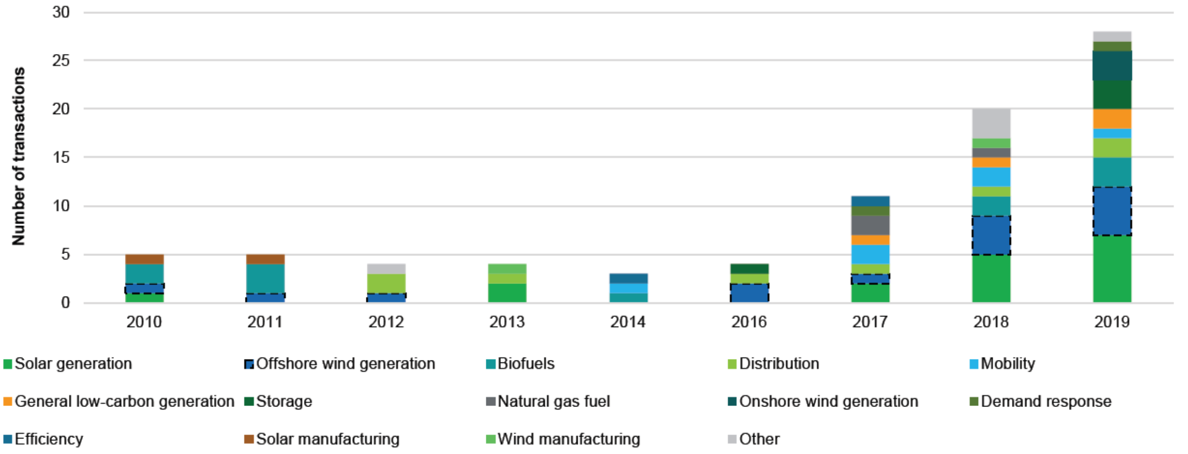
Acquisitions in the low-carbon segment by oil and gas companies



Notes: Includes acquisitions, direct investments, and license awards. "Other" includes carbon carbon, utilization, and storage (CCUS), fusion, gas generation, tidal, and trading. Excludes venture capital transactions.
Source: IHS Markit

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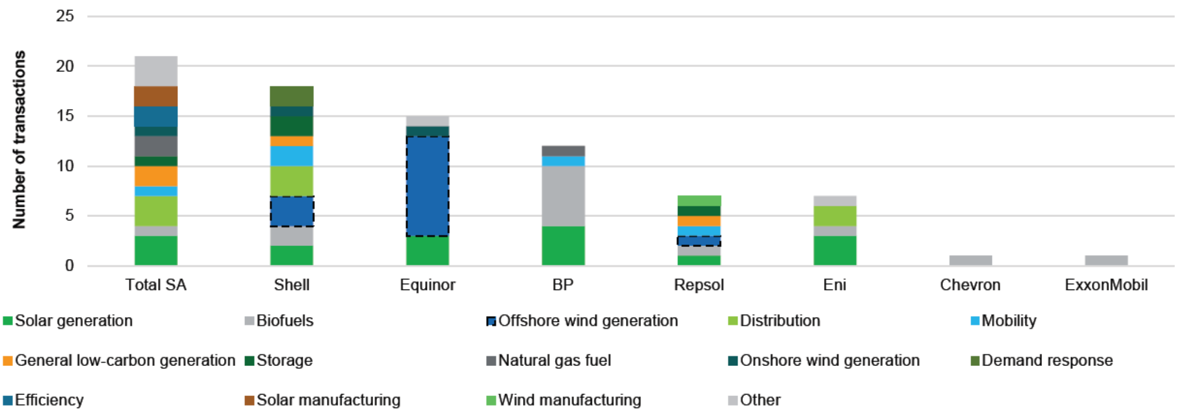
Acquisitions in the low-carbon segment by oil and gas companies, since 2010



Notes: Includes acquisitions, direct investments, and license awards. "Other" includes carbon carbon, utilization, and storage (CCUS), fusion, gas generation, tidal, and trading. Excludes venture capital transactions.
Source: IHS Markit

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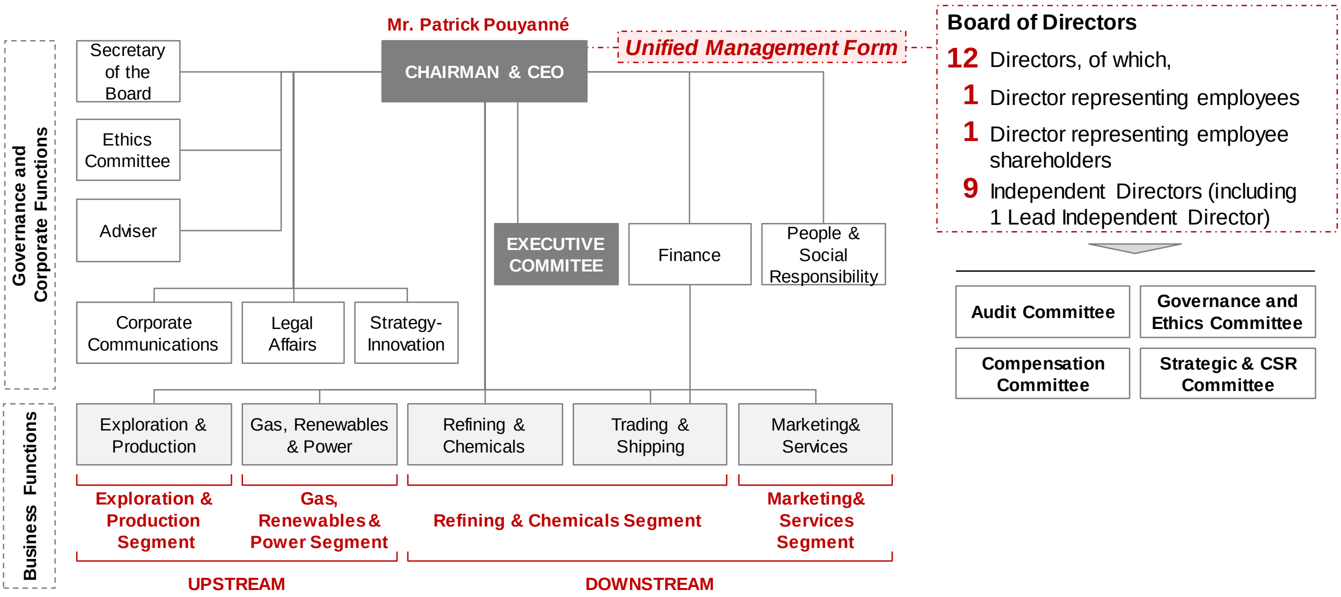
Appendix 10: High level organizational structure



Appendix 11: TOTAL's management strategic objectives

2016

	Target	Realized	
Capex, incl. resource renewal	~19 B$	18,3 B$	✓
Cost reduction	2,4 B$	2,8 B$	✓
Upstream Opex	6,5 $/boe	5,9 $/boe	✓
Production growth	>4%	+4,5%	✓
Downstream CFFO	~7 B$	6,8 B$	✓
Net asset sales	2 B$	3 B$	✓
Resource additions	1,2 Bboe (<3$/boe)	1,7 Bboe (1,5$/boe)	✓

Source: TOTAL's 2016 Results & Outlook presentation

2017

	Target	Realized	
Organic Capex	14-15 B$	14,4 B$	✓
Cost reduction	3,5 B$	3,7 B$	✓
Upstream Opex	5,5 $/boe	5,4 $/boe	✓
Production growth	>4%	+5%	✓
Downstream CFFO	~7 B$	6,9 B$	✓
Disposal program	10 B$	>10 B$	✓
Organic breakeven	<30 $/b	27 $/b	✓

Source: TOTAL's 2017 Results & Outlook presentation

2018

	Target	Realized	
Capital investment	~16 B$	15,6 B$	✓
Cost reduction	4 B$	4,2 B$	✓
Upstream Opex	5,5 $/boe	5,7 $/boe	✓
Production growth	6%	8%	✓
Downstream CFFO	7 B$	6,5 B$	✓
Dividend increase	3,2%	3,2%	✓
Share buyback	5 B$ (2018-20)	1,5 B$ (2018)	✓

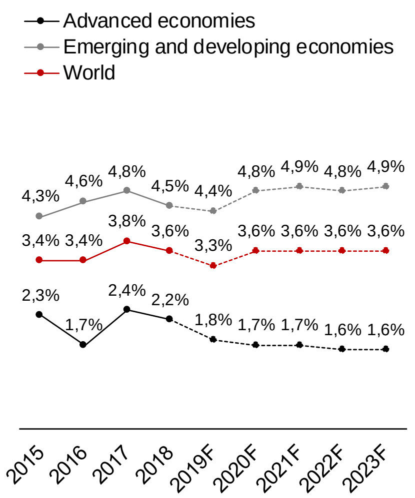
Source: TOTAL's 2018 Results & Outlook presentation

TOTAL's management has a track record of consistently delivering the targeted objectives.

Appendix 12: World Economic Outlook

World GDP Growth

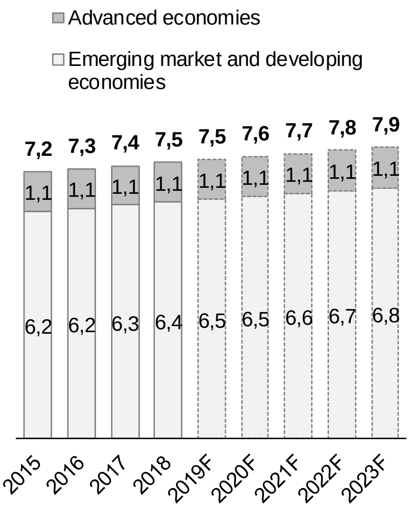
Real GDP growth
(Real annual percent change)



Source: IMF (2019)

World Population

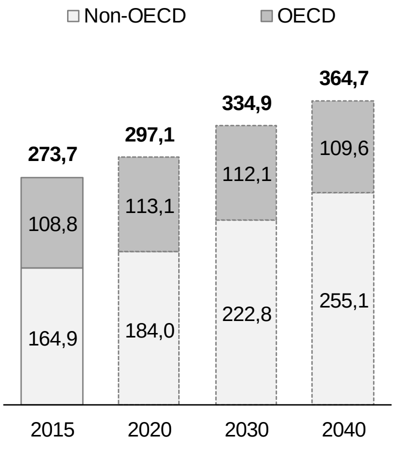
Population
(Millions of people)



Source: IMF (2019)

World Energy Demand

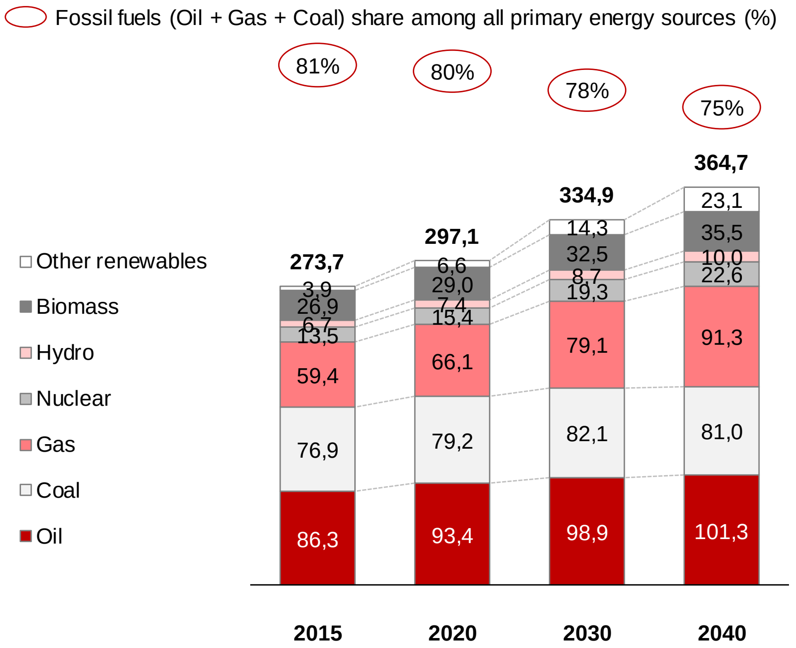
Total primary energy demand by region (mboe/d)



Source: World Oil Outlook 2040, OPEC 2018

Appendix 13: World primary energy demand and Oil peak demand expectation

World primary energy demand by fuel type (mboe/d)



Source: World Oil Outlook 2040, OPEC 2018

Oil peak demand expectation

- "Oil is forecast to remain the largest contributor to the energy mix."
- **It is not expected to see a oil demand peak before 2040.**

"World Oil Outlook 2040", OPEC (2018)

- "**Fossil fuels dominate the global demand mix** but, the demand curve flattens in 2030s as renewables and electrification expand"
- "**Oil demand peaks in 2036**, oil's resilience depends on continued petrochemicals demand despite moves to address single-use plastics crisis" [WM ETO Base Case]

"Energy Transition Outlook", Wood Mackenzie (2019)

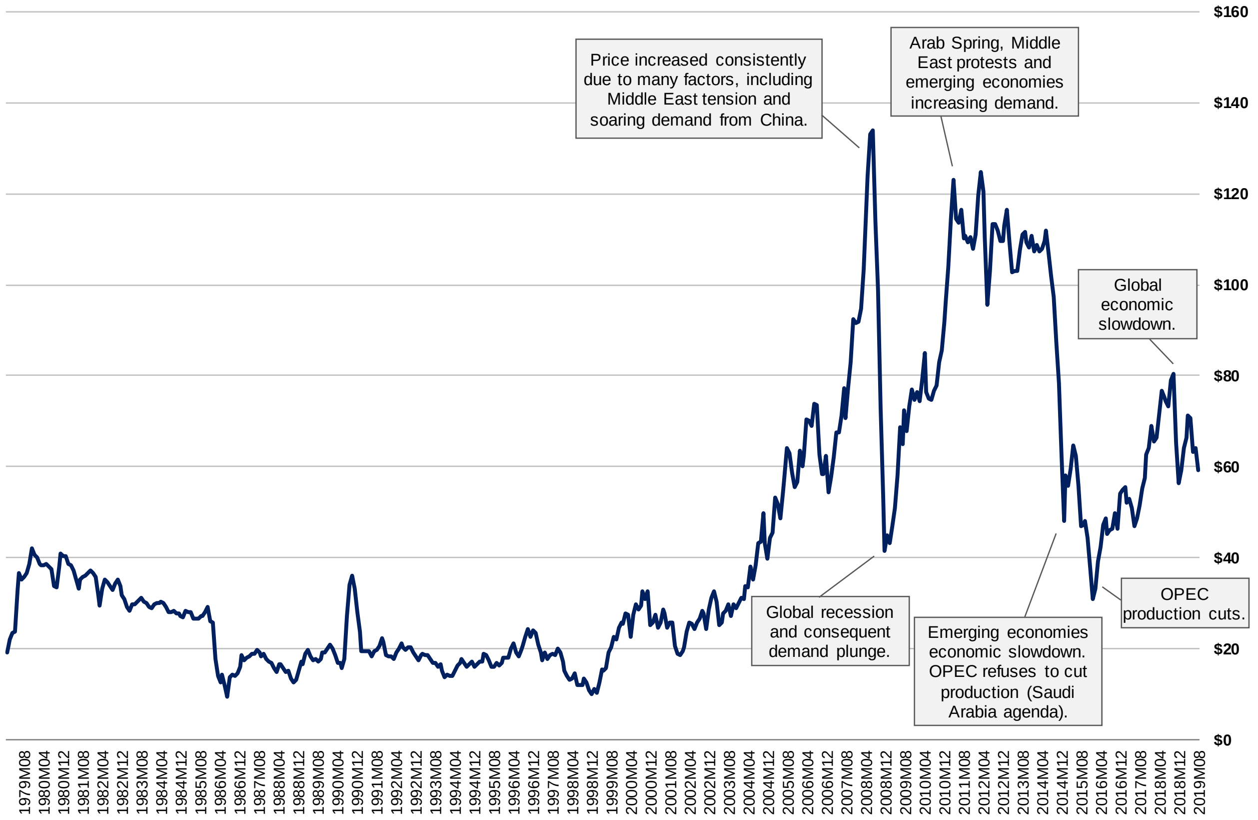
- "**Gas continues to grow its share of global energy demand** - the only fossil fuel to do so."
- "*In our Reference Case,* ***we project a peak oil demand in 2033."***

"Global Energy Perspective 2019",McKinsey&Co.(2019)

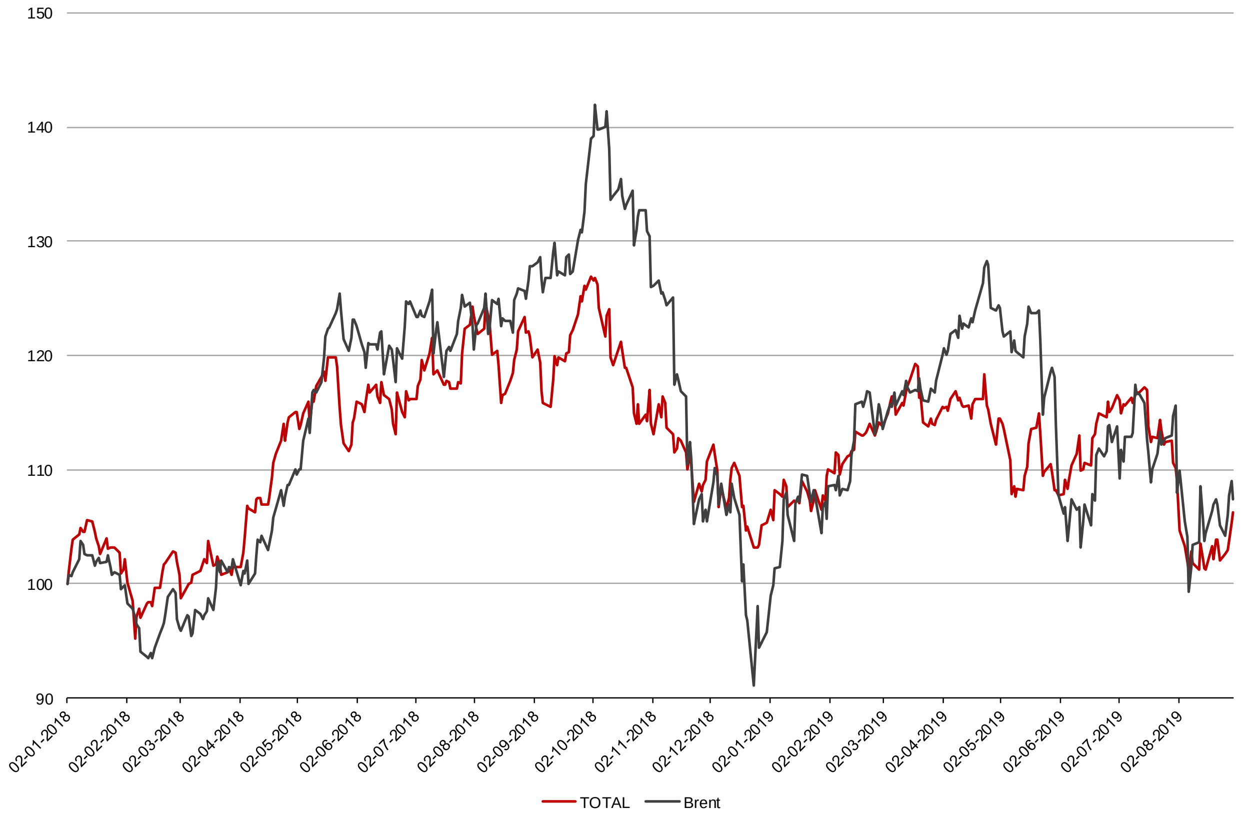
- "**World petroleum and other liquid fuels consumption increases more than 20%** in the Reference case between 2018 and 2050."

"International Energy Outlook", US EIA (2019)

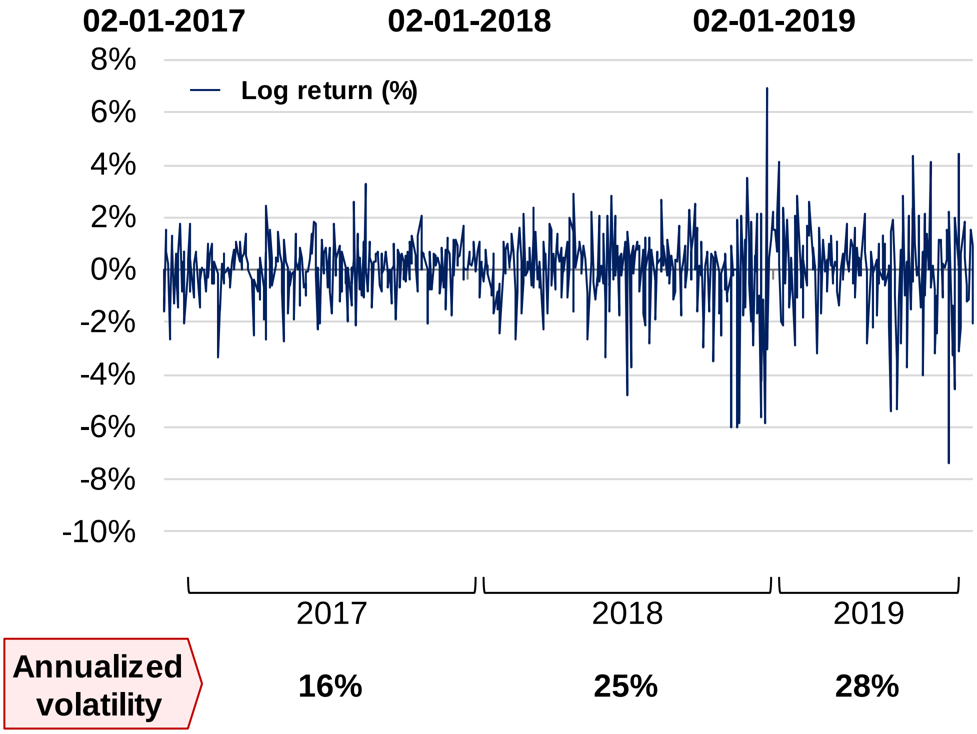
Appendix 14: Brent evolution ($/b)



Appendix 15: Brent evolution vs. TOTAL price (Base year analysis)



Appendix 16: Brent quote volatility



Source: Bloomberg

Appendix 17: Income Statement

For the year ended December 31, in million EUR

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	CAGR 15-18	CAGR 18-23F
SALES	**149,071**	**135,362**	**152,116**	**177,429**	**168,751**	**173,635**	**178,753**	**199,270**	**217,468**	**6.0%**	**4.2%**
Exploration & Production	**21,978**	**18,674**	**27,776**	**35,731**	**34,060**	**36,588**	**38,284**	**40,053**	**41,900**	**17.6%**	**3.2%**
Non-Group sales	7,881	5,611	7,519	9,313	8,877	9,536	9,978	10,439	10,921	5.7%	3.2%
Intersegment sales	14,097	13,062	20,257	26,418	25,182	27,052	28,305	29,614	30,979	23.3%	3.2%
Gas, Renewables & Power	**9,365**	**10,030**	**12,448**	**15,276**	**16,124**	**16,973**	**19,801**	**39,603**	**56,576**	**17.7%**	**29.9%**
Non-Group sales	8,242	9,121	11,402	13,675	14,434	15,194	17,726	35,453	50,647	18.4%	29.9%
Intersegment sales	1,123	909	1,047	1,601	1,690	1,779	2,075	4,150	5,929	12.6%	29.9%
Refining & Chemicals	**87,823**	**78,734**	**90,784**	**108,041**	**100,729**	**103,260**	**104,614**	**105,984**	**107,373**	**7.2%**	**-0.1%**
Non-Group sales	63,668	59,329	66,974	77,988	72,710	74,537	75,514	76,504	77,506	7.0%	-0.1%
Intersegment sales	24,155	19,405	23,811	30,053	28,019	28,723	29,099	29,481	29,867	7.6%	-0.1%
Marketing & Services	**71,037**	**63,429**	**66,961**	**77,276**	**73,498**	**75,154**	**76,334**	**77,689**	**79,225**	**2.8%**	**0.5%**
Non-Group sales	70,216	62,754	66,201	76,447	72,709	74,347	75,515	76,854	78,375	2.9%	0.5%
Intersegment sales	821	675	760	830	789	807	820	834	851	0.3%	0.5%
Corporate	**203**	**284**	**352**	**60**	**206**	**206**	**206**	**206**	**206**	**-33.3%**	**27.9%**
Non-Group sales	6	6	20	6	20	20	20	20	20	-2.0%	27.9%
Intersegment sales	197	278	332	54	186	186	186	186	186	-34.9%	27.9%
Intercompany	**-41,334**	**-35,789**	**-46,206**	**-58,956**	**-55,866**	**-58,546**	**-60,486**	**-64,265**	**-67,812**	**12.6%**	**2.8%**
Non-Group sales	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Intersegment sales	-41,334	-35,789	-46,206	-58,956	-55,866	-58,546	-60,486	-64,265	-67,812	12.6%	2.8%
Excise taxes	**-19,776**	**-19,723**	**-19,864**	**-21,405**	**-21,140**	**-21,626**	**-21,956**	**-22,329**	**-22,746**	**2.7%**	**1.2%**
Exploration & Production	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Gas, Renewables & Power	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Refining & Chemicals	-3,703	-3,204	-2,668	-2,847	-3,490	-3,578	-3,624	-3,672	-3,720	-8.4%	5.5%
Marketing & Services	-16,073	-16,519	-17,196	-18,558	-17,651	-18,048	-18,332	-18,657	-19,026	4.9%	0.5%
Corporate	0	0	0	0	0	0	0	0	0	0.0%	0.0%
REVENUES FROM SALES	**129,296**	**115,639**	**132,252**	**156,024**	**147,611**	**152,009**	**156,797**	**176,942**	**194,722**	**6.5%**	**4.5%**
Exploration & Production	21,978	18,674	27,776	35,731	34,060	36,588	38,284	40,053	41,900	17.6%	3.2%
Gas, Renewables & Power	9,365	10,030	12,448	15,276	16,124	16,973	19,801	39,603	56,576	17.7%	29.9%
Refining & Chemicals	84,120	75,530	88,116	105,195	97,239	99,683	100,989	102,312	103,653	7.7%	-0.3%
Marketing & Services	54,964	46,910	49,766	58,719	55,848	57,106	58,003	59,032	60,199	2.2%	0.5%
Corporate	203	284	352	60	206	206	206	206	206	-33.3%	27.9%
Intercompany	-41,334	-35,789	-46,206	-58,956	-55,866	-58,546	-60,486	-64,265	-67,812	12.6%	2.8%
Purchases, net of inventory variation	-87,150	-75,370	-88,178	-106,625	-96,980	-99,449	-103,144	-120,898	-134,912	7.0%	4.8%
Other operating expenses	-29,569	-24,792	-23,062	-24,371	-25,748	-25,942	-25,581	-24,916	-24,937	-6.2%	0.5%
Exploration costs	-1,795	-1,143	-766	-675	-1,249	-1,185	-1,136	-1,026	-1,006	-27.8%	8.3%
Operating expenses	**-118,514**	**-101,304**	**-112,007**	**-131,671**	**-123,976**	**-126,576**	**-129,860**	**-146,839**	**-160,854**	**3.6%**	**4.1%**
Exploration & Production	-15,151	-13,238	-13,122	-15,640	-15,614	-16,550	-17,378	-18,247	-19,159	1.1%	4.1%
Gas, Renewables & Power	-9,890	-10,222	-12,367	-14,897	-15,724	-16,225	-18,492	-36,112	-50,341	14.6%	27.6%
Refining & Chemicals	-84,471	-72,124	-84,154	-102,872	-94,398	-96,879	-98,149	-99,435	-100,738	6.8%	-0.4%
Marketing & Services	-54,017	-43,176	-47,962	-57,025	-53,272	-54,633	-55,491	-56,476	-57,593	1.8%	0.2%
Corporate	-834	-935	-990	-680	-835	-835	-835	-835	-835	-6.6%	4.2%
Intercompany	45,850	38,391	46,588	59,443	55,866	58,546	60,486	64,265	67,812	9.0%	2.7%
Other income	3,251	1,174	3,380	1,558	2,341	2,341	2,341	2,341	2,341	-21.7%	8.5%
EBITDA	**14,033**	**15,509**	**23,625**	**25,910**	**25,975**	**27,774**	**29,278**	**32,443**	**36,209**	**22.7%**	**6.9%**
Exploration & Production	10,078	6,610	18,035	21,648	20,787	22,378	23,246	24,147	25,081	29.0%	3.0%
Gas, Renewables & Power	-525	-192	81	379	400	748	1,309	3,491	6,235	-189.7%	75.1%
Refining & Chemicals	-351	3,407	3,962	2,322	2,842	2,804	2,840	2,878	2,915	-287.7%	4.7%
Marketing & Services	947	3,734	1,803	1,694	2,576	2,472	2,511	2,556	2,606	21.4%	9.0%
Corporate	-632	-652	-638	-620	-629	-629	-629	-629	-629	-0.6%	0.3%
Intercompany	4,515	2,602	381	487	0	0	0	0	0	-52.4%	-100.0%
Depreciation, depletion and impairment of tangible asset	**-9,775**	**-10,329**	**-14,283**	**-11,858**	**-12,435**	**-13,030**	**-13,662**	**-14,295**	**-14,965**	**6.6%**	**4.8%**
Exploration & Production	-8,639	-8,847	-12,285	-9,566	-9,949	-10,344	-10,764	-11,183	-11,628	3.5%	4.0%
Gas, Renewables & Power	-169	-230	-428	-619	-739	-863	-994	-1,125	-1,264	54.1%	15.3%
Refining & Chemicals	-602	-765	-953	-1,036	-1,068	-1,101	-1,136	-1,171	-1,208	19.8%	3.1%
Marketing & Services	-350	-458	-583	-601	-639	-678	-720	-762	-806	19.8%	6.1%
Corporate	-15	-28	-35	-36	-40	-44	-49	-54	-59	33.7%	10.5%
OPERATING INCOME	**1,007**	**4,006**	**5,962**	**12,495**	**11,200**	**12,403**	**13,275**	**15,807**	**18,903**	**131.5%**	**8.6%**
Exploration & Production	-1,811	-3,411	2,369	10,525	8,497	9,694	10,142	10,623	11,113	-279.8%	1.1%
Gas, Renewables & Power	-695	-422	-346	-241	-339	-115	315	2,366	4,971	-29.8%	-283.2%
Refining & Chemicals	-954	2,642	3,010	1,287	1,774	1,703	1,705	1,707	1,708	-210.5%	5.8%
Marketing & Services	598	3,276	1,221	1,093	1,937	1,794	1,791	1,794	1,800	22.3%	10.5%
Corporate	-646	-680	-673	-656	-669	-673	-678	-683	-688	0.5%	1.0%
Intercompany	4,515	2,602	381	487	0	0	0	0	0	-52.4%	-100.0%
Financial interest on debt	-872	-1,002	-1,361	-1,797	-1,415	-1,462	-1,497	-1,530	-1,551	27.3%	-2.9%
Financial income and expense from cash and cash equival	85	4	0	0	0	0	0	0	0	-100.0%	0.0%
Cost of net debt	**-787**	**-998**	**-1,361**	**-1,797**	**-1,415**	**-1,462**	**-1,497**	**-1,530**	**-1,551**	**31.7%**	**-2.9%**
Other financial income	795	878	849	949	868	868	868	868	868	6.1%	-1.8%
Other financial expense	-590	-575	-569	-581	-579	-579	-579	-579	-579	-0.5%	-0.1%
Equity in income (loss) of affiliates	**2,128**	**2,001**	**1,787**	**2,686**	**2,172**	**2,190**	**2,190**	**2,190**	**2,190**	**8.1%**	**-4.0%**
Exploration & Production	1,495	931	946	2,017	1,456	1,479	1,479	1,479	1,479	10.5%	-6.0%
Gas, Renewables & Power	102	113	12	41	63	63	63	63	63	-26.4%	9.3%
Refining & Chemicals	496	843	690	578	572	566	566	566	566	5.2%	-0.4%
Marketing & Services	35	114	139	51	81	81	81	81	81	13.1%	9.7%
Corporate	1	0	0	0	0	0	0	0	0	-100.0%	0.0%
Income taxes	**-1,490**	**-877**	**-2,687**	**-5,522**	**-5,261**	**-5,684**	**-5,987**	**-6,888**	**-7,997**	**54.7%**	**7.7%**
Consolidated net income	**4,315**	**5,610**	**7,361**	**9,788**	**9,326**	**10,076**	**10,612**	**12,209**	**14,175**	**31.4%**	**7.7%**
Minority interests	-271	9	-294	88	88	88	88	88	88	-168.7%	0.0%
Group share	**4,586**	**5,601**	**7,656**	**9,700**	**9,238**	**9,988**	**10,523**	**12,121**	**14,087**	**28.4%**	**7.7%**

Appendix 18: Statement of Financial Position

For the year ended December 31, in million EUR

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
TOTAL ASSETS	**206,593**	**218,999**	**201,822**	**224,207**	**224,939**	**228,362**	**232,069**	**239,078**	**246,628**
Noncurrent Assets	**141,955**	**150,243**	**131,162**	**154,526**	**156,015**	**157,333**	**158,865**	**159,765**	**160,843**
Non-Current Marketable Securities	1,142	1,074	1,437	1,241	1,241	1,241	1,241	1,241	1,241
Property Plant & Equipment - Net	100,790	106,164	90,997	98,956	99,514	99,936	100,529	100,618	100,849
Total Intangible Assets - Net	13,389	14,565	12,134	25,255	25,398	25,505	25,657	25,679	25,738
Investment In Affiliates/Joint Ventures	17,839	19,509	18,385	20,472	20,472	20,472	20,472	20,472	20,472
Other Noncurrent Assets	4,008	3,928	3,314	2,191	2,979	3,767	4,555	5,343	6,132
Deferred Tax Assets (Long-Term)	3,665	4,141	4,330	5,818	5,818	5,818	5,818	5,818	5,818
Derivative Assets (Long-Term)	1,122	861	565	594	594	594	594	594	594
Current Assets	**64,638**	**68,756**	**70,660**	**69,681**	**68,924**	**71,029**	**73,204**	**79,313**	**85,785**
Cash and Equivalents	21,415	23,321	27,604	24,369	23,369	24,654	25,970	28,636	32,055
Accounts Receivable - Trade	9,782	11,580	12,388	15,080	15,424	15,870	16,338	18,213	19,877
Inventories	12,071	14,456	13,741	12,993	12,893	13,266	13,657	15,224	16,615
Assets Held For Sale	1,094	1,021	2,285	1,191	1,191	1,191	1,191	1,191	1,191
Other Current Assets	14,580	14,066	11,820	12,857	12,857	12,857	12,857	12,857	12,857
Other Financial Assets - Short Term	5,697	4,312	2,822	3,191	3,191	3,191	3,191	3,191	3,191
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**206,593**	**218,999**	**201,822**	**224,207**	**224,939**	**228,362**	**232,069**	**239,078**	**246,628**
Stockholder Equity	**87,805**	**96,306**	**94,857**	**103,138**	**104,222**	**105,420**	**107,320**	**110,548**	**115,042**
Minority/Non Controlling Int (Stckhldrs Eqty)	2,683	2,744	2,064	2,160	2,248	2,337	2,425	2,513	2,601
Common Stock	7,059	7,210	6,556	7,184	7,184	7,184	7,184	7,184	7,184
Additional Paid In Capital	93,436	100,073	93,196	105,282	106,277	107,388	109,199	112,340	116,745
Treasury Stock (Amount)	-4,220	-569	-381	-1,609	-1,609	-1,609	-1,609	-1,609	-1,609
Cumulative Translation Adjustment	-11,153	-13,152	-6,578	-9,879	-9,879	-9,879	-9,879	-9,879	-9,879
Non Current Liabilities	**71,876**	**70,844**	**59,798**	**66,725**	**67,324**	**68,916**	**70,061**	**71,181**	**71,879**
Long Term Debt	40,920	40,833	34,387	35,041	35,640	37,231	38,376	39,497	40,195
Pension/Postretirement Liabilities	3,473	3,552	3,107	2,937	2,937	2,937	2,937	2,937	2,937
Deferred Tax Liabilities (Long-Term)	11,375	10,486	9,007	10,033	10,033	10,033	10,033	10,033	10,033
Other Provisions For Liabilities And Charges	16,107	15,972	13,297	18,715	18,715	18,715	18,715	18,715	18,715
Current Liabilities	**46,912**	**51,849**	**47,168**	**54,343**	**53,393**	**54,026**	**54,689**	**57,348**	**59,707**
Accounts Payable - Trade	19,260	22,022	22,025	22,820	21,870	22,503	23,166	25,825	28,184
Short-Term Borrowings	11,650	13,508	9,434	11,619	11,619	11,619	11,619	11,619	11,619
Other Current Liabilities	15,538	15,853	14,789	19,843	19,843	19,843	19,843	19,843	19,843
Liabilities Assoc With Assets Held For Sale	464	466	920	61	61	61	61	61	61

Appendix 19: Cash Flow Statement

For the year ended December 31, in million EUR

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Cash From Operating Activities	**17,982**	**14,934**	**19,797**	**20,935**	**19,779**	**22,131**	**23,290**	**24,932**	**27,656**
Net Income (Inc. Minority/Non Controlling Int.)	4,315	5,610	7,361	9,788	9,326	10,076	10,612	12,209	14,175
Depreciation And Amortization - CF	11,230	11,023	11,289	12,359	12,435	13,030	13,662	14,295	14,965
Net Change In Working Capital and Other items	2,437	-1,699	1,147	-1,213	-1,981	-975	-984	-1,572	-1,483
Cash From Investing Activities	**-18,435**	**-15,958**	**-10,318**	**-12,666**	**-13,136**	**-13,559**	**-14,407**	**-14,407**	**-15,254**
Additions To Fixed And Intangible Assets and Other items	-18,435	-15,958	-10,318	-12,666	-13,136	-13,559	-14,407	-14,407	-15,254
Cash From Financing Activities	**956**	**3,193**	**-4,914**	**-11,801**	**-7,643**	**-7,286**	**-7,567**	**-7,859**	**-8,983**
Dividends Paid and Repurchase of Common Stock	-2,869	-2,490	-2,469	-7,914	-8,242	-8,877	-8,712	-8,980	-9,681
ST and LT Borrowings and Other Financing Activities	3,824	5,682	-2,445	-3,887	599	1,591	1,145	1,121	698
Net Change In Cash	**502**	**2,170**	**4,565**	**-3,532**	**-1,000**	**1,285**	**1,316**	**2,666**	**3,419**

Appendix 20: Common-Size Income Statement

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
SALES	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Exploration & Production	**14.7%**	**13.8%**	**18.3%**	**20.1%**	**20.2%**	**21.1%**	**21.4%**	**20.1%**	**19.3%**
Non-Group sales	5.3%	4.1%	4.9%	5.2%	5.3%	5.5%	5.6%	5.2%	5.0%
Intersegment sales	9.5%	9.6%	13.3%	14.9%	14.9%	15.6%	15.8%	14.9%	14.2%
Gas, Renewables & Power	**6.3%**	**7.4%**	**8.2%**	**8.6%**	**9.6%**	**9.8%**	**11.1%**	**19.9%**	**26.0%**
Non-Group sales	5.5%	6.7%	7.5%	7.7%	8.6%	8.8%	9.9%	17.8%	23.3%
Intersegment sales	0.8%	0.7%	0.7%	0.9%	1.0%	1.0%	1.2%	2.1%	2.7%
Refining & Chemicals	**58.9%**	**58.2%**	**59.7%**	**60.9%**	**59.7%**	**59.5%**	**58.5%**	**53.2%**	**49.4%**
Non-Group sales	42.7%	43.8%	44.0%	44.0%	43.1%	42.9%	42.2%	38.4%	35.6%
Intersegment sales	16.2%	14.3%	15.7%	16.9%	16.6%	16.5%	16.3%	14.8%	13.7%
Marketing & Services	**47.7%**	**46.9%**	**44.0%**	**43.6%**	**43.6%**	**43.3%**	**42.7%**	**39.0%**	**36.4%**
Non-Group sales	47.1%	46.4%	43.5%	43.1%	43.1%	42.8%	42.2%	38.6%	36.0%
Intersegment sales	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%
Corporate	**0.1%**	**0.2%**	**0.2%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.1%**	**0.1%**
Non-Group sales	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Intersegment sales	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Intercompany	**-27.7%**	**-26.4%**	**-30.4%**	**-33.2%**	**-33.1%**	**-33.7%**	**-33.8%**	**-32.3%**	**-31.2%**
Non-Group sales	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Intersegment sales	-27.7%	-26.4%	-30.4%	-33.2%	-33.1%	-33.7%	-33.8%	-32.3%	-31.2%
Excise taxes	**-13.3%**	**-14.6%**	**-13.1%**	**-12.1%**	**-12.5%**	**-12.5%**	**-12.3%**	**-11.2%**	**-10.5%**
Exploration & Production	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gas, Renewables & Power	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Refining & Chemicals	-2.5%	-2.4%	-1.8%	-1.6%	-2.1%	-2.1%	-2.0%	-1.8%	-1.7%
Marketing & Services	-10.8%	-12.2%	-11.3%	-10.5%	-10.5%	-10.4%	-10.3%	-9.4%	-8.7%
Corporate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
REVENUES FROM SALES	**86.7%**	**85.4%**	**86.9%**	**87.9%**	**87.5%**	**87.5%**	**87.7%**	**88.8%**	**89.5%**
Exploration & Production	14.7%	13.8%	18.3%	20.1%	20.2%	21.1%	21.4%	20.1%	19.3%
Gas, Renewables & Power	6.3%	7.4%	8.2%	8.6%	9.6%	9.8%	11.1%	19.9%	26.0%
Refining & Chemicals	56.4%	55.8%	57.9%	59.3%	57.6%	57.4%	56.5%	51.3%	47.7%
Marketing & Services	36.9%	34.7%	32.7%	33.1%	33.1%	32.9%	32.4%	29.6%	27.7%
Corporate	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Intercompany	-27.7%	-26.4%	-30.4%	-33.2%	-33.1%	-33.7%	-33.8%	-32.3%	-31.2%
Purchases, net of inventory variation	-58.5%	-55.7%	-58.0%	-60.1%	-57.5%	-57.3%	-57.7%	-60.7%	-62.0%
Other operating expenses	-19.8%	-18.3%	-15.2%	-13.7%	-15.3%	-14.9%	-14.3%	-12.5%	-11.5%
Exploration costs	-1.2%	-0.8%	-0.5%	-0.4%	-0.7%	-0.7%	-0.6%	-0.5%	-0.5%
Operating expenses	**-79.5%**	**-74.8%**	**-73.6%**	**-74.2%**	**-73.5%**	**-72.9%**	**-72.6%**	**-73.7%**	**-74.0%**
Exploration & Production	-10.2%	-9.8%	-8.6%	-8.8%	-9.3%	-9.5%	-9.7%	-9.2%	-8.8%
Gas, Renewables & Power	-6.6%	-7.6%	-8.1%	-8.4%	-9.3%	-9.3%	-10.3%	-18.1%	-23.1%
Refining & Chemicals	-56.7%	-53.3%	-55.3%	-58.0%	-55.9%	-55.8%	-54.9%	-49.9%	-46.3%
Marketing & Services	-36.2%	-31.9%	-31.5%	-32.1%	-31.6%	-31.5%	-31.0%	-28.3%	-26.5%
Corporate	-0.6%	-0.7%	-0.7%	-0.4%	-0.5%	-0.5%	-0.5%	-0.4%	-0.4%
Intercompany	30.8%	28.4%	30.6%	33.5%	33.1%	33.7%	33.8%	32.3%	31.2%
Other income	2.2%	0.9%	2.2%	0.9%	1.4%	1.3%	1.3%	1.2%	1.1%
EBITDA	**9.4%**	**11.5%**	**15.5%**	**14.6%**	**15.4%**	**16.0%**	**16.4%**	**16.3%**	**16.7%**
Exploration & Production	6.8%	4.9%	11.9%	12.2%	12.3%	12.9%	13.0%	12.1%	11.5%
Gas, Renewables & Power	-0.4%	-0.1%	0.1%	0.2%	0.2%	0.4%	0.7%	1.8%	2.9%
Refining & Chemicals	-0.2%	2.5%	2.6%	1.3%	1.7%	1.6%	1.6%	1.4%	1.3%
Marketing & Services	0.6%	2.8%	1.2%	1.0%	1.5%	1.4%	1.4%	1.3%	1.2%
Corporate	-0.4%	-0.5%	-0.4%	-0.3%	-0.4%	-0.4%	-0.4%	-0.3%	-0.3%
Intercompany	3.0%	1.9%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Depreciation, depletion and impairment of tangible assets	**-6.6%**	**-7.6%**	**-9.4%**	**-6.7%**	**-7.4%**	**-7.5%**	**-7.6%**	**-7.2%**	**-6.9%**
Exploration & Production	-5.8%	-6.5%	-8.1%	-5.4%	-5.9%	-6.0%	-6.0%	-5.6%	-5.3%
Gas, Renewables & Power	-0.1%	-0.2%	-0.3%	-0.3%	-0.4%	-0.5%	-0.6%	-0.6%	-0.6%
Refining & Chemicals	-0.4%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
Marketing & Services	-0.2%	-0.3%	-0.4%	-0.3%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%
Corporate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
OPERATING INCOME	**0.7%**	**3.0%**	**3.9%**	**7.0%**	**6.6%**	**7.1%**	**7.4%**	**7.9%**	**8.7%**
Exploration & Production	-1.2%	-2.5%	1.6%	5.9%	5.0%	5.6%	5.7%	5.3%	5.1%
Gas, Renewables & Power	-0.5%	-0.3%	-0.2%	-0.1%	-0.2%	-0.1%	0.2%	1.2%	2.3%
Refining & Chemicals	-0.6%	2.0%	2.0%	0.7%	1.1%	1.0%	1.0%	0.9%	0.8%
Marketing & Services	0.4%	2.4%	0.8%	0.6%	1.1%	1.0%	1.0%	0.9%	0.8%
Corporate	-0.4%	-0.5%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.3%	-0.3%
Intercompany	3.0%	1.9%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Financial interest on debt	-0.6%	-0.7%	-0.9%	-1.0%	-0.8%	-0.8%	-0.8%	-0.8%	-0.7%
Financial income and expense from cash and cash equivalents	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cost of net debt	**-0.5%**	**-0.7%**	**-0.9%**	**-1.0%**	**-0.8%**	**-0.8%**	**-0.8%**	**-0.8%**	**-0.7%**
Other financial income	0.5%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%
Other financial expense	-0.4%	-0.4%	-0.4%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
Equity in income (loss) of affiliates	**1.4%**	**1.5%**	**1.2%**	**1.5%**	**1.3%**	**1.3%**	**1.2%**	**1.1%**	**1.0%**
Exploration & Production	1.0%	0.7%	0.6%	1.1%	0.9%	0.9%	0.8%	0.7%	0.7%
Gas, Renewables & Power	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Refining & Chemicals	0.3%	0.6%	0.5%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Marketing & Services	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corporate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Income taxes	**-1.0%**	**-0.6%**	**-1.8%**	**-3.1%**	**-3.1%**	**-3.3%**	**-3.3%**	**-3.5%**	**-3.7%**
Consolidated net income	**2.9%**	**4.1%**	**4.8%**	**5.5%**	**5.5%**	**5.8%**	**5.9%**	**6.1%**	**6.5%**
Minority interests	-0.2%	0.0%	-0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%
Group share	**3.1%**	**4.1%**	**5.0%**	**5.5%**	**5.5%**	**5.8%**	**5.9%**	**6.1%**	**6.5%**

Appendix 21: Common-Size Statement of Financial Position

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
TOTAL ASSETS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Noncurrent Assets	**68.7%**	**68.6%**	**65.0%**	**68.9%**	**69.4%**	**68.9%**	**68.5%**	**66.8%**	**65.2%**
Non-Current Marketable Securities	0.6%	0.5%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%
Property Plant & Equipment - Net	48.8%	48.5%	45.1%	44.1%	44.2%	43.8%	43.3%	42.1%	40.9%
Total Intangible Assets - Net	6.5%	6.7%	6.0%	11.3%	11.3%	11.2%	11.1%	10.7%	10.4%
Investment In Affiliates/Joint Ventures	8.6%	8.9%	9.1%	9.1%	9.1%	9.0%	8.8%	8.6%	8.3%
Other Noncurrent Assets	1.9%	1.8%	1.6%	1.0%	1.3%	1.6%	2.0%	2.2%	2.5%
Deferred Tax Assets (Long-Term)	1.8%	1.9%	2.1%	2.6%	2.6%	2.5%	2.5%	2.4%	2.4%
Derivative Assets (Long-Term)	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%
Current Assets	**31.3%**	**31.4%**	**35.0%**	**31.1%**	**30.6%**	**31.1%**	**31.5%**	**33.2%**	**34.8%**
Cash and Equivalents	10.4%	10.6%	13.7%	10.9%	10.4%	10.8%	11.2%	12.0%	13.0%
Accounts Receivable - Trade	4.7%	5.3%	6.1%	6.7%	6.9%	6.9%	7.0%	7.6%	8.1%
Inventories	5.8%	6.6%	6.8%	5.8%	5.7%	5.8%	5.9%	6.4%	6.7%
Assets Held For Sale	0.5%	0.5%	1.1%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Other Current Assets	7.1%	6.4%	5.9%	5.7%	5.7%	5.6%	5.5%	5.4%	5.2%
Other Financial Assets - Short Term	2.8%	2.0%	1.4%	1.4%	1.4%	1.4%	1.4%	1.3%	1.3%
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Stockholder Equity	**42.5%**	**44.0%**	**47.0%**	**46.0%**	**46.3%**	**46.2%**	**46.2%**	**46.2%**	**46.6%**
Minority/Non Controlling Int (Stckhldrs Eqty)	1.3%	1.3%	1.0%	1.0%	1.0%	1.0%	1.0%	1.1%	1.1%
Common Stock	3.4%	3.3%	3.2%	3.2%	3.2%	3.1%	3.1%	3.0%	2.9%
Additional Paid In Capital	45.2%	45.7%	46.2%	47.0%	47.2%	47.0%	47.1%	47.0%	47.3%
Treasury Stock (Amount)	-2.0%	-0.3%	-0.2%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%
Cumulative Translation Adjustment	-5.4%	-6.0%	-3.3%	-4.4%	-4.4%	-4.3%	-4.3%	-4.1%	-4.0%
Non Current Liabilities	**34.8%**	**32.3%**	**29.6%**	**29.8%**	**29.9%**	**30.2%**	**30.2%**	**29.8%**	**29.1%**
Long Term Debt	19.8%	18.6%	17.0%	15.6%	15.8%	16.3%	16.5%	16.5%	16.3%
Pension/Postretirement Liabilities	1.7%	1.6%	1.5%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%
Deferred Tax Liabilities (Long-Term)	5.5%	4.8%	4.5%	4.5%	4.5%	4.4%	4.3%	4.2%	4.1%
Other Provisions For Liabilities And Charges	7.8%	7.3%	6.6%	8.3%	8.3%	8.2%	8.1%	7.8%	7.6%
Current Liabilities	**22.7%**	**23.7%**	**23.4%**	**24.2%**	**23.7%**	**23.7%**	**23.6%**	**24.0%**	**24.2%**
Accounts Payable - Trade	9.3%	10.1%	10.9%	10.2%	9.7%	9.9%	10.0%	10.8%	11.4%
Short-Term Borrowings	5.6%	6.2%	4.7%	5.2%	5.2%	5.1%	5.0%	4.9%	4.7%
Other Current Liabilities	7.5%	7.2%	7.3%	8.9%	8.8%	8.7%	8.6%	8.3%	8.0%
Liabilities Assoc With Assets Held For Sale	0.2%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Appendix 22: Common-Size Cash Flow Statement

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Cash From Operating Activities	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Net Income (Inc. Minority/Non Controlling Int.)	24.0%	37.6%	37.2%	46.8%	47.1%	45.5%	45.6%	49.0%	51.3%
Depreciation And Amortization - CF	62.5%	73.8%	57.0%	59.0%	62.9%	58.9%	58.7%	57.3%	54.1%
Net Change In Working Capital and Other items	13.6%	-11.4%	5.8%	-5.8%	-10.0%	-4.4%	-4.2%	-6.3%	-5.4%
Cash From Investing Activities	**-102.5%**	**-106.9%**	**-52.1%**	**-60.5%**	**-66.4%**	**-61.3%**	**-61.9%**	**-57.8%**	**-55.2%**
Additions To Fixed And Intangible Assets and Other items	-102.5%	-106.9%	-52.1%	-60.5%	-66.4%	-61.3%	-61.9%	-57.8%	-55.2%
Cash From Financing Activities	**5.3%**	**21.4%**	**-24.8%**	**-56.4%**	**-38.6%**	**-32.9%**	**-32.5%**	**-31.5%**	**-32.5%**
Dividends Paid and Repurchase of Common Stock	-16.0%	-16.7%	-12.5%	-37.8%	-41.7%	-40.1%	-37.4%	-36.0%	-35.0%
ST and LT Borrowings and Other Financing Activities	21.3%	38.0%	-12.3%	-18.6%	3.0%	7.2%	4.9%	4.5%	2.5%
Net Change In Cash	**2.8%**	**14.5%**	**23.1%**	**-16.9%**	**-5.1%**	**5.8%**	**5.7%**	**10.7%**	**12.4%**

Appendix 23: Key Financial Ratios

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F
Efficiency Ratios									
Total Assets Turnover (x)	0.75	0.64	0.72	0.83	0.75	0.77	0.78	0.85	0.90
Accounts Receivables Turnover (x)	13.1	12.7	12.7	12.9	11.1	11.1	11.1	11.5	11.4
Collection Period (days)	30	31	31	31	36	36	36	35	35
Inventory Turnover (x)	9.6	7.6	7.9	9.9	9.6	9.7	9.6	10.2	10.1
Days in Inventory (days)	38	48	46	37	38	38	38	36	36
Payables Turnover (x)	7.6	7.3	7.3	7.7	6.4	6.4	6.4	7.1	7.2
Payables Period (days)	30	42	40	42	45	46	46	45	45
Operating Cycle or Cash Cycle (days)	38	38	37	26	29	28	28	25	26
Solvency Ratios									
Long- and short-term Debt Ratio (%)	57%	56%	53%	54%	54%	54%	54%	54%	53%
Long-term Debt Ratio (%)	35%	32%	30%	30%	30%	30%	30%	30%	29%
Debt to Equity Ratio (x)	1.4	1.3	1.1	1.2	1.2	1.2	1.2	1.2	1.1
Equity Multiplier (x)	2.4	2.3	2.1	2.2	2.2	2.2	2.2	2.2	2.1
Debt to EBITDA (x)	8.5	7.9	4.5	4.7	4.6	4.4	4.3	4.0	3.6
Interest Coverage Ratio (x)	4.9	5.2	6.9	7.8	9.6	10.1	10.4	11.9	13.7
Liquidity Ratios									
Current Ratio (x)	1.4	1.3	1.5	1.3	1.3	1.3	1.3	1.4	1.4
Quick Ratio (x)	0.8	0.8	1.0	0.8	0.8	0.8	0.9	0.9	0.9
Cash Ratio (x)	0.6	0.6	0.7	0.5	0.5	0.5	0.6	0.6	0.6
Profitability Ratios									
Gross Profit Margin (%)	20.5%	25.2%	26.4%	25.8%	26.5%	27.1%	27.4%	26.3%	26.0%
EBITDA Margin (%)	9.4%	11.5%	15.5%	14.6%	15.4%	16.0%	16.4%	16.3%	16.7%
EBIT Margin (%)	2.9%	3.8%	6.1%	7.9%	8.0%	8.5%	8.7%	9.1%	9.8%
Net Profit Margin (%)	2.9%	4.1%	4.8%	5.5%	5.5%	5.8%	5.9%	6.1%	6.5%
ROA (%)	2.2%	2.6%	3.8%	4.3%	4.1%	4.4%	4.5%	5.1%	5.7%
ROIC (%)	3.4%	4.5%	7.2%	8.5%	8.1%	8.7%	9.0%	10.2%	11.5%
NOPAT (€M)	3,165	4,480	6,844	8,984	8,657	9,426	9,984	11,602	13,582
Invested Capital (€M)	94,382	100,389	95,057	106,216	107,299	108,497	110,397	113,626	118,119
Non-operational assets (€M)	24,842	26,393	26,130	28,668	28,668	28,668	28,668	28,668	28,668
Non-operational liabilities (€M)	31,419	30,476	26,331	31,746	31,746	31,746	31,746	31,746	31,746
ROCE (%)	2.7%	3.1%	6.0%	8.3%	7.9%	8.5%	8.8%	10.0%	11.4%
Capital Employed (€M)	159,681	167,150	154,655	169,864	171,546	174,336	177,380	181,730	186,921
ROE (%)	5.2%	5.8%	8.1%	9.4%	8.9%	9.5%	9.8%	11.0%	12.2%
ROE (%) - DuPont Approach	5.2%	5.8%	8.1%	9.4%	8.9%	9.5%	9.8%	11.0%	12.2%
NI / S (%)	3.5%	4.8%	5.8%	6.2%	6.3%	6.6%	6.7%	6.9%	7.2%
S / A (%)	62.6%	52.8%	65.5%	69.6%	65.6%	66.6%	67.6%	74.0%	79.0%
A / E (%)	235.3%	227.4%	212.8%	217.4%	215.8%	216.6%	216.2%	216.3%	214.4%
SG&A/Sales (%)	19.8%	18.3%	15.2%	13.7%	15.3%	14.9%	14.3%	12.5%	11.5%
R&D/Sales (%)	0.0%	0.8%	0.6%	0.6%	0.7%	0.6%	0.6%	0.6%	0.5%
Value Creation and Cash Flow Ratios									
Economic Value Added (EVA) (€M)	-4,022	-3,164	-394	897	487	1,165	1,578	2,951	4,588
Debt Coverage (%)	8%	10%	17%	21%	20%	21%	21%	24%	27%

Appendix 24: Forecasting Assumptions

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	Unit	Assumptions / Rational
MACROECONOMIC ASSUMPTIONS											
Inflation rate, average consumer prices (Annu	2.8%	2.8%	3.2%	3.6%	3.6%	3.6%	3.5%	3.5%	3.4%	%	IMF Forecast (August 2019)
Real GDP growth (Annual percent change) - W	3.4%	3.4%	3.8%	3.6%	3.3%	3.6%	3.6%	3.6%	3.6%	%	IMF Forecast (August 2019)
Population (Millions of people) - WORLD	7,210	7,295	7,382	7,462	7,545	7,627	7,710	7,794	7,875	#	IMF Forecast (August 2019)
Average euro/dollar (€/$)	1.11	1.11	1.13	1.18	1.15	1.16	1.20	1.19	1.20	€/$	IMF Forecast (August 2019)
OIL & GAS AND ENERGY MARKET											
Global Oil demand	92,500	92,900	93,300	93,700	94,100	94,500	94,900	95,300	95,700	kb/d	TOTAL Energy Outlook 2040
Global Natural Gas demand	3,400	3,461	3,524	3,587	3,651	3,717	3,784	3,852	3,922	Bcm/yr	TOTAL Energy Outlook 2040
Global Power demand	24,200	24,732	25,277	25,833	26,401	26,982	27,575	28,182	28,802	TWh/yr	TOTAL Energy Outlook 2040
Annual avg. Brent price ($/b)	52.4	43.7	54.2	71.3	64.0	65.0	65.0	65.0	65.0	$/b	EIA Short-Term Energy Outlook (August 2019)
EXPLORATION & PRODUCTION SEGMENT											
Combined production (kboe/d)	**2,347**	**2,452**	**2,566**	**2,775**	**2,969**	**3,147**	**3,305**	**3,470**	**3,644**	kboe/d	
Oil (including bitumen) (kb/d)	1,237	1,088	1,167	1,378	1,458	1,527	1,585	1,644	1,706	kb/d	Company prioritizing Natural Gas growth, the least
Gas (including Condensates and associated N	1,110	1,364	1,399	1,397	1,512	1,620	1,720	1,826	1,938	kboe/d	polluting fossil fuel that can be used to generate power,
Oil share (%)	*52.7%*	*44.4%*	*45.5%*	*49.7%*	*49.1%*	*48.5%*	*48.0%*	*47.4%*	*46.8%*	%	boosting its share of hydrocarbon production from 50%
Gas share (%)	*47.3%*	*55.6%*	*54.5%*	*50.3%*	*50.9%*	*51.5%*	*52.0%*	*52.6%*	*53.2%*	%	today to 60% in 2035.
Upstream production growth	-	-	-	-	7%	6%	5%	5%	5%	%	Company projection; Backed by OPEC's World Oil Outlook 2040.
Operating expenses											
Avg. OPEX/boe	-18.4	-15.9	-15.7	-18.1	-17.0	-17.0	-17.0	-17.0	-17.0	$/boe	Historical average. Includes all production costs (eg. exploration expenditure, technical costs, production costs, ...)
Hydrocarbon proved reserves (Mboe)	**11,580**	**11,518**	**11,475**	**12,050**	**12,050**	**12,050**	**12,050**	**12,050**	**12,050**	Mboe	Reserve-Replacement Ratio = 100%
Oil (including bitumen) (Mb)	5,605	4,543	4,615	5,203	5,203	5,203	5,203	5,203	5,203	Mb	Constant 2018 mix.
Gas (including Condensates and associated N	5,975	6,975	6,860	6,847	6,847	6,847	6,847	6,847	6,847	Mboe	Constant 2018 mix.
GAS, RENEWABLES & POWER											
Capacity and consumers											
Installed power capacities by gas or renewables (Group share) (GW)		0.8	0.9	2.7	2.9	3.0	3.5	7.0	10.0	GW	TOTAL Results & Outlook Presentation (Feb. 2019)
Retail B2C consumers (millions)				4.0	4.8	5.5	6.3	7.0	7.8	M#	TOTAL Results & Outlook Presentation (Feb. 2019)
EBITDA/Sales	-5.6%	-1.9%	0.7%	2.5%	2.5%	4.4%	6.6%	8.8%	11.0%		New fast growing segment. EBITDA/Sales industry avg. = 22.0% (Source: Damodaran) Convergence within 10 years.
REFINING & CHEMICALS											
Refined products (refined quantities produce	**1,931**	**1,871**	**1,758**	**1,793**	**1,816**	**1,840**	**1,864**	**1,889**	**1,914**	kb/d	
Refined quantities growth rate					1.3%	1.3%	1.3%	1.3%	1.3%	%	Historical 2013-2018 CAGR.
Revenues & OPEX											
Average selling price	138	128	160	195	179	181	181	181	181	$/b	Indexed to Brent.
Excise taxes - EUR (%)	4.2%	4.1%	2.9%	2.6%	3.5%	3.5%	3.5%	3.5%	3.5%	%	Historical average.
Average OPEX/b	-124	-114	-147	-184	-168	-170	-170	-170	-170	$/b	Indexed to Brent.
MARKETING & SERVICES											
Marketing & Services petroleum product (ref	**1,818**	**1,793**	**1,779**	**1,801**	**1,822**	**1,847**	**1,876**	**1,909**	**1,947**	kb/d	
YoY %	*2.8%*	*-1.4%*	*-0.8%*	*1.2%*	*1.2%*	*1.4%*	*1.6%*	*1.8%*	*2.0%*	%	
Europe and Central Asia	1,092	1,093	1,049	1,001	975	951	926	903	880	kb/d	
YoY %	*-0.7%*	*0.1%*	*-4.0%*	*-4.6%*	*-2.5%*	*-2.5%*	*-2.5%*	*-2.5%*	*-2.5%*	%	Historical 2013-2018 CAGR.
Africa	423	419	431	443	471	501	532	566	602	kb/d	
YoY %	*11.3%*	*-0.9%*	*2.9%*	*2.8%*	*6.3%*	*6.3%*	*6.3%*	*6.3%*	*6.3%*	%	Historical 2013-2018 CAGR.
Middle East	85	55	45	41	39	37	35	33	31	kb/d	
YoY %	*10.4%*	*-35.3%*	*-18.2%*	*-8.9%*	*-5.4%*	*-5.4%*	*-5.4%*	*-5.4%*	*-5.4%*	%	Historical 2013-2018 CAGR.
Americas	70	76	81	117	124	132	141	150	159	kb/d	
YoY %	*-10.3%*	*8.6%*	*6.6%*	*44.4%*	*6.3%*	*6.3%*	*6.3%*	*6.3%*	*6.3%*	%	Historical 2013-2018 CAGR.
Asia Pacific	148	150	173	199	212	226	242	258	275	kb/d	
YoY %	*10.4%*	*1.4%*	*15.3%*	*15.0%*	*6.7%*	*6.7%*	*6.7%*	*6.7%*	*6.7%*	%	Historical 2013-2018 CAGR.
Revenues & OPEX											
Average selling price	115	103	116	139	130	132	132	132	132	$/b	Indexed to Brent.
Excise taxes - EUR (%)	22.6%	26.0%	25.7%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	%	Historical average.
Average OPEX/b	-84	-71	-83	-102	-95	-96	-96	-96	-96	$/b	Indexed to Brent.
Corporate Tax Rate											
Effective tax rate	26%	14%	27%	36%	36%	36%	36%	36%	36%	%	2018 constant.
CAPEX											
CAPEX - Organic Capex+ Net Acquisitions	20,449	17,757	11,636	15,600	15-16 B	15-17 B				M$	TOTAL Results & Outlook Presentation (Feb. 2019); Net investments = Gross investments - Divestments - Other operations with non-controlling interests.
Net investments (USD)	20,449	17,757	11,636	15,568	15,500	16,000	17,000	17,000	18,000	M$	Company market announcement range
Net investments (EUR)	18,423	15,997	10,297	13,193	13,136	13,559	14,407	14,407	15,254	M€	@ FX rate
Depreciation, depletion and impairment of tangible assets and mineral interests											
Gross Noncurrent Assets	249,606	265,703	245,368	279,349	292,485	306,044	320,451	334,858	350,112	M€	CAPEX "as is" + New CAPEX addition
D&A rate	**3.9%**	**3.9%**	**5.8%**	**4.2%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	%	Historical 2015-2018 average.
DEBT											
DEBT (LT + ST)	52,570	54,342	43,820	46,660	47,259	48,850	49,995	51,116	51,814	M€	Adjusted to mantain D/(D+E) structure constant.
Interest rate	1.8%	1.9%	2.8%	4.0%	3.0%	3.0%	3.0%	3.0%	3.0%	%	Estimated Rd.
D/(D+E)				26.7%	26.7%	26.7%	26.6%	26.6%	26.5%	%	Sanity check!
Net Working Capital											
Current Assets											
Acc Rec/ Sales	6.6%	8.6%	8.1%	8.5%	9.1%	9.1%	9.1%	9.1%	9.1%	%	Industry average. (Source: Damodaran, 2019)
Inventory/Sales	8.1%	10.7%	9.0%	7.3%	7.6%	7.6%	7.6%	7.6%	7.6%	%	Industry average. (Source: Damodaran, 2019)
Current Liabilities											
Acc Pay/ Sales	12.9%	16.3%	14.5%	12.9%	13.0%	13.0%	13.0%	13.0%	13.0%	%	Industry average. (Source: Damodaran, 2019)
DIVIDENDS & SHARES BUYBACK											
Dividend per share (DPS)	2.44 €	2.45 €	2.48 €	2.56 €	2.64 €	2.72 €	2.82 €	2.92 €	3.02 €	€	TOTAL shareholder return policy.
Shares Outstanding (In Millions)	2,440	2,430	2,529	2,641	2,641	2,641	2,641	2,641	2,641	M#	Constant.
SHARES BUYBACK - USD				1,500	1,500	2,000	1,500	1,500	2,000	M$	TOTAL shareholder return policy.
SHARES BUYBACK - EUR				1,271	1,271	1,695	1,271	1,271	1,695	M€	@ FX rate

Appendix 25: Risk Free Rate estimation

	2019F	Source	Comments
Government Bond Yields			
Germany Bund 10 Year Yield	-0.38%	Bloomberg (July, 2019)	
Germany Bund 30 Year Yield	0.20%	Bloomberg (July, 2019)	
Government Bond Yields - 10Y Avg.			
Germany Bund 10 Year Yield	1.18%	Bloomberg	Monthly avg.
Survey Estimates			
RFR - France	1.2%	Fernandez (2019)	
RFR - Germany	1.1%	Fernandez (2019)	

Appendix 26: Beta estimation

		2019F	Source	Comments
Financial Agencies				
Reuters		0.93	Reuters	
Financial Times		0.94	Financial Times	
Bloomberg		0.96	Bloomberg	
Yahoo Finance		1.04	Yahoo Finance	3Y Monthly avg.
HISTORICAL BETA				
Raw Beta (Regression vs. MSCI ACWI Index)		0.90		Monthly data for 5 years (60 observations)
Blume adjusted Beta		**0.93**		
PURE PLAY METHOD, FROM THE INDUSTRY - INTEGRATED				
Unlevered beta corrected for cash				
Oil/Gas (Integrated)		1.11	Damodaran (2019)	Oil/Gas (Integrated)
D/E		0.16		Net Debt
Corporate tax rate		36%		
Levered beta		1.22		
PURE PLAY METHOD, FROM THE INDUSTRY - BY SEGMENT				
Unlevered beta corrected for cash				
Exploration & Production		1.16	Damodaran (2019)	Oil/Gas (Production and Exploration)
Gas, Renewables & Power		0.49	Damodaran (2019)	Power
Refining & Chemicals		0.96	Damodaran (2019)	Chemical (Diversified)
Marketing & Services		0.75	Damodaran (2019)	Oil/Gas Distribution
Corporate		1.11	Damodaran (2019)	Oil/Gas (Integrated)
Levered beta - By segment				
Exploration & Production		1.28		
Gas, Renewables & Power		0.53		
Refining & Chemicals		1.05		
Marketing & Services		0.83		
Corporate		1.22		
Segment weight - Non-Group Sales				
Exploration & Production	9,313	5.2%		
Gas, Renewables & Power	13,675	7.7%		
Refining & Chemicals	77,988	44.0%		
Marketing & Services	76,447	43.1%		
Corporate	6	0.0%		
TOTAL's weighted average levered beta		**0.93**		Sanity check

Appendix 27: Equity Risk Premium estimation

				2019F	Source	Comments
Historical premium based on rating default spread						
Location based CRP						
Moody's rating - US or Germay				**Aaa**	Damodaran (2019)	
Mature Market Premium - US or Germay				5.96%	Damodaran (2019)	
Moody's rating - France				**Aa2**	Damodaran (2019)	Country of incorporation
Country Risk Premium - Default Spread				0.69%	Damodaran (2019)	
Equity Risk Premium				**6.65%**		
Operation based CRP						
	Europe	**North America**	**Africa**	**Rest of World**		Weighted average of the the country risk premiums of the the countries that it does business in.
Mature Market Premium - US or Germay	5.96%	5.96%	5.96%	5.96%	Damodaran (2019)	
Region Risk Premium	2.97%	0.00%	7.38%	4.53%	Average of Country Risk Premium	
Equity Risk Premium	**8.93%**	**5.96%**	**13.34%**	**10.49%**		Mature Market + Country Risk Premium
TOTAL's Non-Group Sales (%)	**70.30%**	**10.62%**	**10.63%**	**8.44%**	TOTAL Registration Document 2018	
Weighted average ERP				**9.21%**		
Forward-Looking Estimates						
Survey Estimates						
Required MRP - France (Avg.)				6.0%	Fernandez (2019)	
Required MRP - World Avg. (Simple Avg.)				8.1%	Fernandez (2019)	Simple average
Financial Agencies						
ERP - Bloomberg				8.7%	Bloomberg	

Appendix 28: Cost of Debt estimation

	2019F	Source	Comments
Historical average interest rate			
Interest Expense	1,797		
Debt (€M)	45,240		2018-2019F Average
Cost of Debt	**4.0%**		
Current YTM			
Issuer:	TOTAL SA		
Currency:	EUR		
Cost of Debt	**2.1%**	Bloomberg	
Current Rating			
Moody's LT Rating	Aa3	Bloomberg	
S&P Issuer Rating	A+	Bloomberg	
Fitch Rating	AA-	Bloomberg	
Credit default spread			
RF	**1.2%**		
Country Default Spread	**0.6%**	Damodaran (2019)	
Operating income (€M)	11,200		
Interest Expense (€M)	1,415		
Interest Coverage Ratio (€M)	7.92		
Synthetic rating	A1/A+	Damodaran (2019)	
Company Default Spread	**1.25%**	Damodaran (2019)	
Cost of Debt	**3.0%**		

Appendix 29: Cost of Equity (CAPM) and Cost of Capital (WACC)

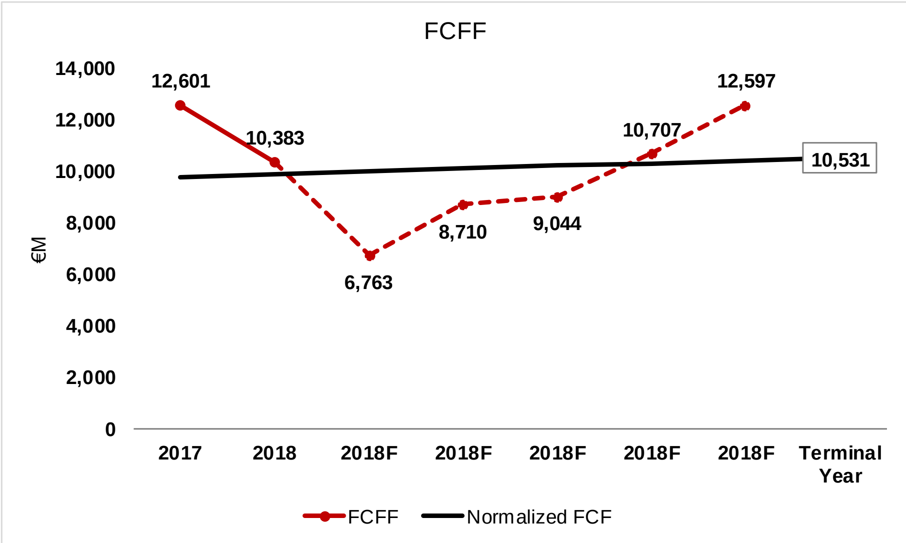
COST OF EQUITY - CAPM	
TOTAL - Oil/Gas (Integrated)	
RF	1.2%
Beta	0.93
ERP	9.2%
Re	**9.8%**
Exploration & Production	
RF	1.2%
Beta	1.28
ERP	9.2%
Re - Exploration & Production	**13.0%**
Gas, Renewables & Power	
RF	1.2%
Beta	0.53
ERP	9.2%
Re - Gas, Renewables & Power	**6.1%**
Refining & Chemicals	
RF	1.2%
Beta	1.05
ERP	9.2%
Re - Refining & Chemicals	**10.9%**
Marketing & Services	
RF	1.2%
Beta	0.83
ERP	9.2%
Re - Marketing & Services	**8.8%**
Corporate	
RF	1.2%
Beta	1.22
ERP	9.2%
Re - Corporate	**12.4%**

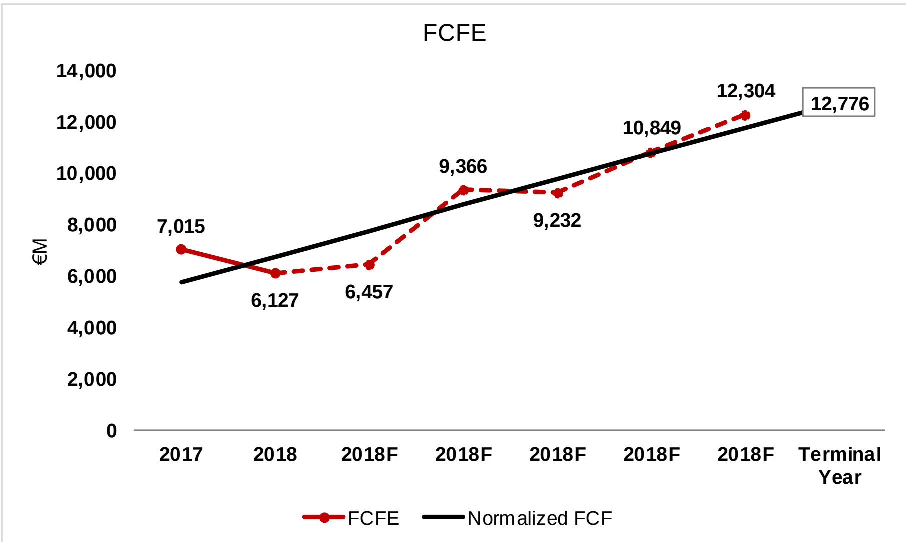
CAPITAL STRUCTURE	
Target D/E	
Net Debt to Equity	15.7%
Debt to Equity	38.3%
D/(E+D)	**27.7%**
E/(E+D)	**72.3%**

COST OF CAPITAL - WACC	
TOTAL - Oil/Gas (Integrated)	
Re	9.8%
E/(E+D)	0.72
Rd	3.0%
(1-t)	63.9%
D/(E+D)	0.28
WACC	**7.6%**
Exploration & Production	
Re	13.0%
E/(E+D)	0.72
Rd	3.0%
(1-t)	63.9%
D/(E+D)	0.28
WACC - Exploration & Production	**9.9%**
Gas, Renewables & Power	
Re	6.1%
E/(E+D)	0.72
Rd	3.0%
(1-t)	63.9%
D/(E+D)	0.28
WACC - Gas, Renewables & Power	**5.0%**
Refining & Chemicals	
Re	10.9%
E/(E+D)	0.72
Rd	3.0%
(1-t)	63.9%
D/(E+D)	0.28
WACC - Refining & Chemicals	**8.4%**
Marketing & Services	
Re	8.8%
E/(E+D)	0.72
Rd	3.0%
(1-t)	63.9%
D/(E+D)	0.28
WACC - Marketing & Services	**6.9%**
Corporate	
Re	12.4%
E/(E+D)	0.72
Rd	3.0%
(1-t)	63.9%
D/(E+D)	0.28
WACC - Corporate	**9.5%**

Appendix 30: Terminal Value FCF normalization

	2017	2018	2018F	2018F	2018F	2018F	2018F	Terminal Year	Unit	Comments
FCFF										
FCFF	**12,601**	**10,383**	**6,763**	**8,710**	**9,044**	**10,707**	**12,597**		€M	
Normalized FCF	9,803	9,907	10,011	10,115	10,219	10,323	10,427	**10,531**	€M	Segment FCFF (%)
EXPLORATION & PRODUCTION								8,365	€M	79%
GAS, RENEWABLES & POWER								952	€M	9%
REFINING & CHEMICALS								998	€M	9%
MARKETING & SERVICES								631	€M	6%
Corporate								-414	€M	-4%
FCFE										
FCFE	**7,015**	**6,127**	**6,457**	**9,366**	**9,232**	**10,849**	**12,304**		€M	
Normalized FCF	5,755	6,758	7,761	8,764	9,767	10,770	11,773	**12,776**	€M	





Appendix 31: Long-run sustainable growth rate

	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	Terminal Period	Unit
GDP Growth											
World	3.4%	3.4%	3.8%	3.6%	3.3%	3.6%	3.6%	3.6%	3.6%	**3.6%**	%
Stable Growth Model: Reinvestment Rate × ROE											
CAPEX	18,423	15,997	10,297	13,193	13,136	13,559	14,407	14,407	15,254	128,673	€M
D&A	9,775	10,329	14,283	11,858	12,435	13,030	13,662	14,295	14,965	114,631	€M
ΔNWC	-505	-868	-1,771	-2,735	1,193	187	196	784	695	-2,825	€M
EBIT	4,258	5,181	9,342	14,053	13,541	14,744	15,616	18,148	21,244	116,126	€M
Corporate tax rate	26%	14%	27%	36%	36%	36%	36%	36%	36%	36%	%
Reinvestment Rate	**257%**	**107%**	**-84%**	**-16%**	**22%**	**8%**	**9%**	**8%**	**7%**	**15%**	%
ROE	**5%**	**6%**	**8%**	**9.4%**	**9%**	**9%**	**10%**	**11%**	**12%**	**12%**	%
g										**1.9%**	%
Dividend sustainable growth rate: PRAT Model (g = b x ROE)											
Net Income (NI)	4,586	5,601	7,656	9,700	9,238	9,988	10,523	12,121	14,087	83,499	€M
Dividends (D)	5,954	5,954	6,272	6,760	6,971	7,182	7,441	7,709	7,986	62,230	€M
Sales (S)	129,296	115,639	132,252	156,024	147,611	152,009	156,797	176,942	194,722	1,361,292	€M
Total Assets (A)	206,593	218,999	201,822	224,207	224,939	228,362	232,069	239,078	246,628	2,022,698	€M
Shareholder's Equity (E)	87,805	96,306	94,857	103,138	104,222	105,420	107,320	110,548	115,042	924,658	€M
(NI-D)/NI	**-30%**	**-6%**	**18%**	**30%**	**25%**	**28%**	**29%**	**36%**	**43%**	**25%**	%
ROE	**5%**	**6%**	**8%**	**9%**	**9%**	**9%**	**10%**	**11%**	**12%**	**9%**	%
NI / S	4%	5%	6%	6%	6%	7%	7%	7%	7%	6%	%
S / A	63%	53%	66%	70%	66%	67%	68%	74%	79%	67%	%
A / E	235%	227%	213%	217%	216%	217%	216%	216%	214%	219%	%
g										**2.3%**	%

Appendix 32: WACC Method – Integrated Enterprise Value

	2018	2019F	2020F	2021F	2022F	2023F	Terminal Period	Unit
TOTAL ENTERPRISE VALUE								
EBIT	14,053	13,541	14,744	15,616	18,148	21,244		€M
Corporate tax rate	36%	36%	36%	36%	36%	36%		%
(+) EBIT * (1-t)	8,984	8,657	9,426	9,984	11,602	13,582		€M
(+) D&A	11,858	12,435	13,030	13,662	14,295	14,965		€M
(-) ΔNWC	2,735	-1,193	-187	-196	-784	-695		€M
(-) CAPEX	-13,193	-13,136	-13,559	-14,407	-14,407	-15,254		€M
(=) FCFF	**10,383**	**6,763**	**8,710**	**9,044**	**10,707**	**12,597**	**10,531**	€M
WACC		7.6%	7.6%	7.6%	7.6%	7.6%	7.6%	%
g							1.9%	%
(=) Enterprise Value		**176,879**	**183,069**	**187,636**	**192,190**	**195,302**		€M
(+) Non-operational assets		**28,668**	**28,668**	**28,668**	**28,668**	**28,668**		€M
(-) Non-operational liabilities		**-31,746**	**-31,746**	**-31,746**	**-31,746**	**-31,746**		€M
(+) Cash and Equivalents		26,560	27,845	29,161	31,827	35,246		€M
(-) Debt (Gross)		-47,259	-48,850	-49,995	-51,116	-51,814		€M
(-) Non-controlling Interest		-2,248	-2,337	-2,425	-2,513	-2,601		€M
(=) Equity		**150,854**	**156,651**	**161,300**	**167,311**	**173,056**		€M
#Shares		2,641	2,641	2,641	2,641	2,641		M#
Price		**57.13 €**	**59.32 €**	**61.08 €**	**63.36 €**	**65.54 €**		€M
Sanity check - D/EV		27%	27%	27%	27%	27%		

Appendix 33: WACC Method – Sum of the Parts

	2018	2019F	2020F	2021F	2022F	2023F	Terminal Period	Unit
SUM OF THE PARTS								
EXPLORATION & PRODUCTION								
EBIT	12,082	10,838	12,034	12,483	12,964	13,454		€M
Corporate tax rate	36%	36%	36%	36%	36%	36%		%
(+) EBIT * (1-t)	7,724	6,929	7,694	7,981	8,288	8,601		€M
(+) D&A	9,566	9,949	10,344	10,764	11,183	11,628		€M
(-) ∆NWC	413	-181	-29	-31	-119	-102		€M
(-) CAPEX	-8,754	-8,716	-8,997	-9,559	-9,559	-10,122		€M
(=) FCFF	**8,950**	**7,981**	**9,011**	**9,153**	**9,793**	**10,005**	**8,365**	€M
WACC		9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	%
g							1.9%	%
(=) Standalone Value		**109,007**	**111,046**	**112,154**	**113,216**	**113,681**		€M
GAS, RENEWABLES & POWER								
EBIT	-241	-339	-115	315	2,366	4,971		€M
Corporate tax rate	36%	36%	36%	36%	36%	36%		%
(+) EBIT * (1-t)	-154	-217	-73	202	1,513	3,178		€M
(+) D&A	619	739	863	994	1,125	1,264		€M
(-) ∆NWC	177	-86	-14	-16	-118	-138		€M
(-) CAPEX	-2,737	-2,725	-2,813	-2,989	-2,989	-3,165		€M
(=) FCFF	**-2,095**	**-2,289**	**-2,037**	**-1,810**	**-469**	**1,139**	**952**	€M
WACC		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	%
g							1.9%	%
(=) Standalone Value		**19,981**	**23,372**	**26,667**	**29,886**	**31,858**		€M
REFINING & CHEMICALS								
EBIT	1,287	1,774	1,703	1,705	1,707	1,708		€M
Corporate tax rate	36%	36%	36%	36%	36%	36%		%
(+) EBIT * (1-t)	823	1,134	1,089	1,090	1,091	1,092		€M
(+) D&A	1,036	1,068	1,101	1,136	1,171	1,208		€M
(-) ∆NWC	1,250	-535	-83	-86	-315	-262		€M
(-) CAPEX	-731	-727	-751	-798	-798	-845		€M
(=) FCFF	**2,378**	**940**	**1,356**	**1,342**	**1,149**	**1,193**	**998**	€M
WACC		8.4%	8.4%	8.4%	8.4%	8.4%	8.4%	%
g							1.9%	%
(=) Standalone Value		**16,099**	**16,435**	**16,348**	**16,268**	**16,391**		€M
MARKETING & SERVICES								
EBIT	1,093	1,937	1,794	1,791	1,794	1,800		€M
Corporate tax rate	36%	36%	36%	36%	36%	36%		%
(+) EBIT * (1-t)	699	1,238	1,147	1,145	1,147	1,151		€M
(+) D&A	601	639	678	720	762	806		€M
(-) ∆NWC	894	-390	-60	-62	-231	-193		€M
(-) CAPEX	-873	-869	-897	-953	-953	-1,009		€M
(=) FCFF	**1,321**	**618**	**868**	**850**	**725**	**755**	**631**	€M
WACC		6.9%	6.9%	6.9%	6.9%	6.9%	6.9%	%
g							1.9%	%
(=) Standalone Value		**12,912**	**13,143**	**13,122**	**13,119**	**13,250**		€M
Corporate								
EBIT	-169	-669	-673	-678	-683	-688		€M
Corporate tax rate	36%	36%	36%	36%	36%	36%		%
(+) EBIT * (1-t)	-108	-428	-430	-433	-436	-440		€M
(+) D&A	36	40	44	49	54	59		€M
(-) ∆NWC	1	-1	0	0	-1	-1		€M
(-) CAPEX	-98	-98	-101	-107	-107	-114		€M
(=) FCFF	**-170**	**-487**	**-487**	**-492**	**-491**	**-495**	**-414**	€M
WACC		9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	%
g							1.9%	%
(=) Standalone Value		**-5,808**	**-5,829**	**-5,850**	**-5,868**	**-5,890**		€M
(=) Enterprise Value		**152,191**	**158,167**	**162,442**	**166,622**	**169,291**		€M
(+) Non-operational assets		**28,668**	**28,668**	**28,668**	**28,668**	**28,668**		€M
(-) Non-operational liabilities		**-31,746**	**-31,746**	**-31,746**	**-31,746**	**-31,746**		€M
(+) Cash and Equivalents		**26,560**	**27,845**	**29,161**	**31,827**	**35,246**		€M
(-) Debt (Gross)		**-47,259**	**-48,850**	**-49,995**	**-51,116**	**-51,814**		€M
(-) Non-controlling Interest		**-2,248**	**-2,337**	**-2,425**	**-2,513**	**-2,601**		€M
(=) Equity		**126,166**	**131,748**	**136,106**	**141,743**	**147,045**		
#Shares		2,641	2,641	2,641	2,641	2,641		M#
Price		**47.78 €**	**49.89 €**	**51.54 €**	**53.68 €**	**55.69 €**		

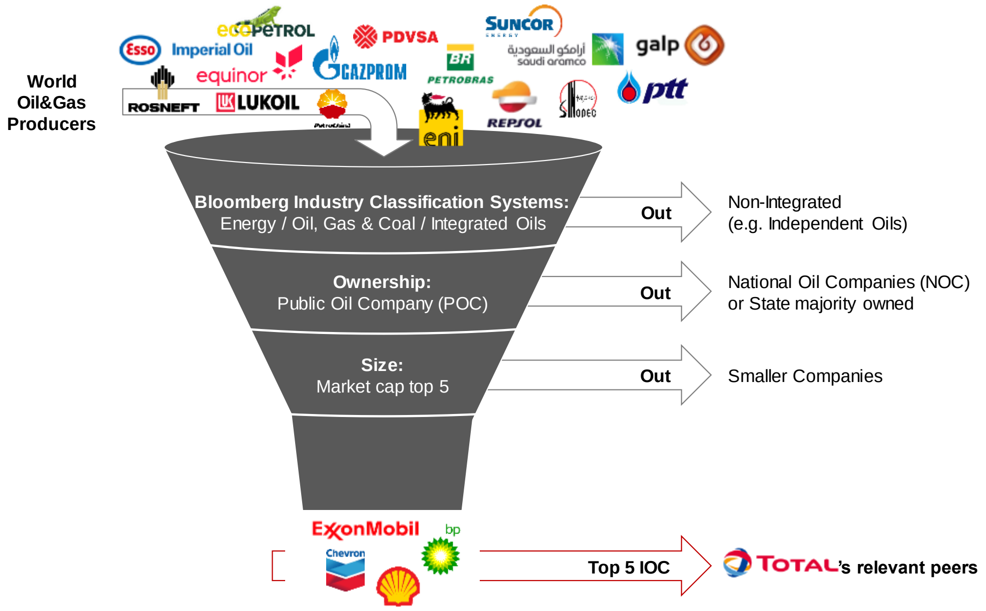
Appendix 34: Flow-to-Equity Method

	2018	2019F	2020F	2021F	2022F	2023F	Terminal Period	Unit
EQUITY VALUE								
(+) FCFF	10,383	6,763	8,710	9,044	10,707	12,597		€M
Interest	1,797	1,415	1,462	1,497	1,530	1,551		€M
Corporate tax rate (t)	36%	36%	36%	36%	36%	36%		%
(-) Interest * (1-t)	1,149	905	935	957	978	992		€M
(+) Net borrowing	-3,107	599	1,591	1,145	1,121	698		€M
(=) FCFE	**6,127**	**6,457**	**9,366**	**9,232**	**10,849**	**12,304**	**12,776**	€M
Re		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	%
g							1.9%	%
(=) Equity Value		**149,928**	**157,527**	**162,676**	**168,477**	**173,071**		€M
#Shares		2,641	2,641	2,641	2,641	2,641		M#
Price		**56.78 €**	**59.66 €**	**61.61 €**	**63.80 €**	**65.54 €**		€M

Appendix 35: Total Payout Model

	2018	2019F	2020F	2021F	2022F	2023F	Terminal Period	Unit
DIVIDEND DISCOUNT MODEL								
Dividend per share	2.56 €	2.64 €	2.72 €	2.82 €	2.92 €	3.02 €		€
Shares Outstanding (In Millions)	2,641	2,641	2,641	2,641	2,641	2,641		M#
DIVIDENDS	6,760	6,971	7,182	7,441	7,709	7,986		€M
Pay-out ratio	70%	75%	72%	71%	64%	57%		%
SHARES BUYBACK - EUR	1,271	1,271	1,695	1,271	1,271	1,695		€M
(=) Shareholders cashflow		**8,242**	**8,877**	**8,712**	**8,980**	**9,681**	**10,030**	€M
Re		9.8%	9.8%	9.8%	9.8%	9.8%	9.8%	%
gS							3.6%	%
H							10	#
gL							2.3%	%
(=) Equity		**143,138**	**148,111**	**152,875**	**158,287**	**163,934**	**154,253**	€M
Price		**54.21 €**	**56.09 €**	**57.89 €**	**59.94 €**	**62.08 €**		€M

Appendix 36: Industry peers selection



Bloomberg, as of:		14-09-2019	SARD Variables						Selected	EV Multiples		Price Multiples
Rank	Company	Ticker	ROE	Debt to Equity	Market Cap (€M)	EPS Growth	EBIT Margin	Ownership	Peer	EV/EBIT	EV/EBITDA	P/E
	BICS - Energy / Oil, Gas & Coal / Integrated Oils											
1	EXXON MOBIL CORP	XOM US Equity	9.4%	19.0%	274,968	-37.1%	6.6%	POC	1	17.4	8.8	17.1
2	CHEVRON CORP	CVX US Equity	9.5%	22.1%	208,113	-10.3%	9.3%	POC	1	13.3	6.7	15.6
3	ROYAL DUTCH SH-A	RDSA LN Equity	10.5%	37.9%	205,272	-6.3%	7.8%	POC	1	9.8	5.4	11.5
4	PETROCHINA-H	857 HK Equity	4.4%	28.9%	139,918	6.6%	5.2%	NOC	0			
5	TOTAL SA	FP FP Equity	9.3%	43.6%	124,102	3.6%	8.9%	POC	1	8.4	5.0	12.7
6	BP PLC	BP/ LN Equity	8.8%	64.8%	115,199	-17.9%	5.0%	POC	1	9.3	4.9	14.3
7	PETROBRAS-PREF	PETR4 BZ Equity	10.8%	115.3%	83,113	11.3%	23.7%	NOC	0			
8	SINOPEC CORP-H	386 HK Equity	7.1%	17.3%	77,906	1.0%	2.3%	NOC	0			
9	GAZPROM	GAZP RM Equity	12.9%	28.0%	77,395	-3.2%	22.6%	NOC	0			
10	ROSNEFT	ROSN RM Equity	13.9%	93.2%	61,306	24.8%	14.8%	NOC	0			
									Average ▶	11.6	6.2	14.2

Appendix 37: Market-Based Valuation

	2019F	2020F	Unit
Enterprise Value Multiples			
EV/EBITDA			
Peers avg.		**6.2**	x
TOTAL - EBITDA	25,975	27,774	€M
TOTAL - EV	**159,766**	**170,828**	€M
(+) Non-operational assets	28,668	28,668	€M
(-) Non-operational liabilities	-31,746	-31,746	€M
(+) Cash and Equivalents	26,560	27,845	€M
(-) Debt (Gross)	-47,259	-48,850	€M
(-) Non-controlling Interest	-2,248	-2,337	€M
TOTAL - Equity	**133,741**	**144,409**	€M
TOTAL - Price	**50.6 €**	**54.7 €**	€/share
EV/EBIT			
Peers avg.		**11.6**	x
TOTAL - EBIT	13,541	14,744	€M
TOTAL - EV	**157,482**	**171,475**	€M
(+) Non-operational assets	28,668	28,668	€M
(-) Non-operational liabilities	-31,746	-31,746	€M
(+) Cash and Equivalents	26,560	27,845	€M
(-) Debt (Gross)	-47,259	-48,850	€M
(-) Non-controlling Interest	-2,248	-2,337	€M
TOTAL - Equity	**131,457**	**145,056**	€M
TOTAL - Price	**49.8 €**	**54.9 €**	€/share

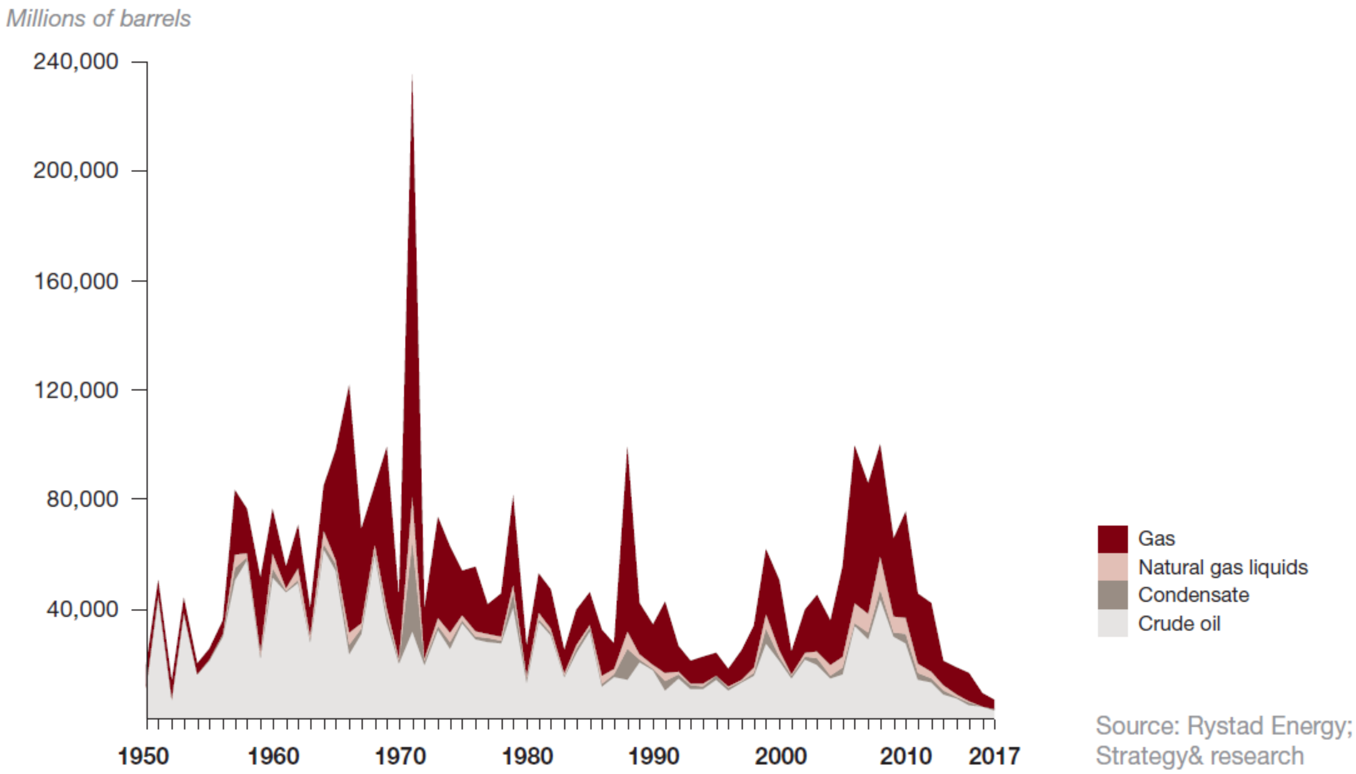
	2019F	2020F	Unit
Equity Value Multiples			
Price/Earnings			
Peers avg.		**14.2**	x
TOTAL - Earnings	9,238	9,988	€M
TOTAL - Equity	**131,619**	**142,303**	€M
TOTAL - Price	**49.8 €**	**53.9 €**	€/share
Assumptions			
Shares Outstanding (In Millions)	2,641	2,641	M#

Appendix 38: Upstream production by geographical zone (kboe/d)

	2016			2017			2018			
	Liquids (kb/d)	Natural gas (Mcf/d)	Total (kboe/d)	Liquids (kb/d)	Natural gas (Mcf/d)	Total (kboe/d)	Liquids (kb/d)	Natural gas (Mcf/d)	Total (kboe/d)	Total (%)
Europe and Central Asia	**249**	**2,737**	**757**	**265**	**2,674**	**761**	**334**	**3,099**	**909**	**33%**
Denmark	0	0	0	0	0	0	25	99	42	2%
Italy	0	0	0	0	0	0	0	0	0	0%
Kazakhstan	3	6	4	31	53	42	56	70	70	3%
Norway	121	618	235	121	640	239	104	577	211	8%
Netherlands	0	141	25	0	112	20	0	98	18	1%
United Kingdom	49	595	158	42	551	142	75	566	179	6%
Russia	76	1,377	335	71	1,318	318	74	1,689	389	14%
Africa (excl. North Africa)	**509**	**621**	**634**	**502**	**759**	**654**	**513**	**786**	**670**	**24%**
Angola	230	68	243	204	130	229	186	132	211	8%
Republic of the Congo	84	29	90	98	32	104	130	32	136	5%
Gabon	55	15	58	51	14	54	36	12	39	1%
Nigeria	140	509	243	149	583	267	161	610	284	10%
Middle East and North Africa	**373**	**795**	**517**	**419**	**771**	**559**	**520**	**805**	**666**	**24%**
Algeria	6	90	23	4	58	15	30	94	47	2%
United Arab Emirates	279	67	291	278	63	290	276	57	288	10%
Iraq	17	1	18	15	1	16	18	1	19	1%
Libya	14	0	14	31	0	31	62	9	63	2%
Oman	26	62	37	25	64	37	26	67	38	1%
Qatar	31	575	134	66	585	170	108	577	211	8%
Americas	**109**	**944**	**279**	**132**	**1,212**	**348**	**183**	**1,161**	**389**	**14%**
Argentina	8	391	78	6	388	76	7	402	79	3%
Bolivia	4	160	34	5	216	46	5	204	42	2%
Brazil	0	0	0	< 1	0	< 1	18	1	19	1%
Canada	34	0	34	59	0	59	95	0	95	3%
Colombia	0	0	0	< 1	0	< 1	1	0	1	0%
United States	31	304	86	31	527	123	35	483	119	4%
Venezuela	32	89	47	31	81	44	22	71	34	1%
Asia- Pacific	**31**	**1,350**	**265**	**28**	**1,247**	**244**	**16**	**748**	**141**	**5%**
Australia	0	91	16	0	114	19	3	181	34	1%
Brunei	3	78	18	3	87	21	5	72	19	1%
China	0	53	10	< 1	80	15	0	88	16	1%
Indonesia	19	657	140	16	519	112	0	14	3	0%
Myanmar	0	165	21	0	151	19	0	133	17	1%
Thaïland	9	306	60	9	296	58	8	260	52	2%
TOTAL PRODUCTION	**1,271**	**6,447**	**2,452**	**1,346**	**6,663**	**2,566**	**1,566**	**6,599**	**2,775**	**100%**

Source: Company Report

Appendix 39: Global volumes of new discoveries of Oil and Gas



Source: PwC – Oil and Gas Trends 2018-19 (2018)

Disclosures and Disclaimer

Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%